Introductory Lectures.

by

Adam Kuhn.

Dr Adam Kuhn's
Lectures when Professor in
University of Pennsylvania

W. Kuhn

History of Medecine

Physick has at different Times been studied on different Plans and with various Succeſs, by which it has undergone many Revolutions, which may however be reduced under 7 principal Periods.

The first comprehends yᵉ Time when ~~Reason~~ Experience & Observation only constituted yᵉ Science of Medecine and extends to the Time of Hippocrates or four hundred Years before the Birth of Christ and 36 years before yᵗ of Alexander, when Dogmatism was established or the joyning of Theory or Philosophy to Experience & Observation by Hippocrates.

Period 2ᵈ.. Begins with the Establishment of Dogmatism and continued untill the Empiric Sect arose. Serapion was the Founder of this, and to Experience alone Regard was paid. <u>Serapion</u> lived about 285 Years before yᵉ Birth of Christ, and in yᵉ Reign of Ptolemy Philadelphus King of Egypt—

<u>Period 3ᵈ</u>.. From yᵉ Establishment of Empericism to yᵉ Rise of yᵉ methodic Sect, which has for its Author Themison, and is properly a Branch of Dogmatism.— Themison lived about yᵉ beginning of yᵉ Christian æra & was cotemparary of Augustus Cæsar.

Period 4th. From ye beginning of ye methodic Sect untill the Times of Galen who suppressed both ye empiric & methodic Sects & restored ye dogmatic of Hippocrates. He ~~lived~~ flourished from ye beginning to ye middle of the second Century, a Cotemporary to Marcus Aurelius Antoninus, sirnamed Philosophus.

Period 5th. Contains a very long Space of Time: from ye Restitution of Dogmatism by Galen untill ye beginning of ye 16th Century, when Paracelsus introduced Chemistry into Medecine, and became ye Author of ye chemical Sect. He was cotemporary to Charles 5th and flourished soon after Luther had seceded fm ye Church of Rome.

Period 6th. From ye introducing Chemistry into Medecine untill ye Discovery of ye Circulation of ye Blood by Harvey, who flourished about ye middle of ye 17th Century, and during ye civil Wars.

Period 7th. From ye Circulation of ye Blood being discovered untill ye present Time. Medecine is at present studied on a dogmatic Plan, but practised on ye empiric —

State of Medecine during ye several Periods

Period 1st.

This occupies a great length of Time, of which we have but very obscure Accounts, little dependance being to be had on ye Historys of those Times—

Or

The

we

whe

attr

they

men

of

suc

of

Ara

is

had

hav

Sci

of

Know

mg

Insp

a l

in

tha

Peo

an

othe

who

kn

Origin of yᵉ Art. This has by some been attributed to divine
Revelation; but this opinion scarce deserves a serious Attention, for
we have little Reason to believe yᵉ divine Revelation in an Art
which is to this Day in a very low & uncertain State. — Others have
attributed the Invention of it to particular Persons, whom
they therefore call Founders or Inventors. But yᵉ Persons
mentioned by Historians perhaps never existed but in Fable
It is not at all probable that one Person should have made
such Progress in Physick as to deserve yᵉ Name of an Inventor
of it. — It is by the successive Labours of Persons that
Arts are produced. We will rather suppose that Medicine
is in one Respect coeval with Man. Ever since Mankind
has been in yᵉ State wherein we find it now, it must
have been subject to various Diseases, and liable to Pain &
Sickness, occasioned by yᵉ Inclemencies of yᵉ Air, Excess
of Diet &c. tho in a much less Degree than what ever we
know, on account of their Simplicity of Life. But they
must always have been more particularly liable to external
Injuries which would require ~~the~~ manual Aid. &c. A Cure would be
attempted. Many Things would perhaps be tried at random,
in many Diseases there is a natural Instinct for Things
that give Relief, some Diseases would be cured by Nature;
People would observe all these, and apply them in ~~singular~~ similar Cases,
and hence yᵉ first Origin of Medicine. The Babylonians and
other Nations exposed their Sick on yᵉ Highways to yᵉ Passengers,
who were requested to examine their State, by which they could
know whether they had ever seen Persons in yᵉ like Condition

* Many of those yᵉ recovered, hung up Tables in yᵉ Temples of Asculapius, specifying yᵉ Disease they had laboured under, an by what Means they had recovered—

and discover those Remedies that they had known to be of use in like Cases.* Long Life and a large Family would render a Man capable of improving in yᵉ Knowledge of Physick. Fame, Humanity and gratefull Returns might contribute in encouraging a Man to make more accurate Observations in order to be more beneficial to his Neighbours. The same Motives might excite him to transmit his Knowledge to Posterity, as indeed we know to have been yᵉ Case, and Medicine to have been confined for Length of Years to certain Familys. + But still this natural Physick, if I may be allowed yᵉ expression, made no great Progress, untill it was cultivated as a regular Science, and carried from one State into another, thus Greece recieved it from Egypt, Rome again from Greece. —

State of Medecine in yᵉ several Countrys during the first Period

Egypt.

Our Accounts of it are incompleat & defective. We have an obscure History of Hermes Tresmegistos, who is reckoned the Father of Medecine & Philosophy of Egypt. He laid down several Rules, which his Successors in Medecine were obliged to observe. [under pain of death He enjoyned that one Person should not presume to prescribe in different Disorders, but confine himself to one, on pain of being put to Death in Case the Patient died. These Regulations were calculated to prevent Mischief, but then they were a great Restraint on Science.

fm which we must conclude that a great deal of Priestcraft was connected with it

‡ & I imagine joined some Theory with it.

They might indeed answer in manual Operations, where great accuracy is required; but not at all in internal Diseases, as it would lead to yᵉ ~~or~~ highest degree of Empiricism, and yet Analogy is sometimes necessary then in Empiricism

Greece

We have scarce any Account of yᵉ natural Physick of yᵉ Grecians, all their Historys being involved in Obscurity & Fable

The Priests of Asculapius were chiefly intrusted with yᵉ Sick who were usually brought to yᵉ Temples to consult yᵉ Deity, and it was thought had yᵉ Cures revealed to them in a Dream.* But some of yᵉ Priests soon became Clinical Physicians, but yᵉ exact Time is difficultly ascertained. They seem to have been particularly attentive to the Prognosis.* All yᵉ Writings or Records of Physick were kept in the Temples, and these were at the same Time the Schools of Physick, some of which became very famous, as Rhodes, Cnidus, Cous, Crotona &c. — This was yᵉ State of Physick unto the Times of Hippocrates. —

Period 2ᵈ

Hippocrates is supposed to have died at 104 Years of Age, the Year before yᵉ Birth of Alexander, 200 Years after Sciences had began to flourish in Greece, & when Socrates & his Disciples had brought yᵉ Sciences to their highest pitch in that Country. He was bred in one of the Temples, but soon became a Student of Philosophy and clinical Practitioner

Reasoning is natural to Man, in every polished Society then the Causes of Things would be enquired into, nor can Philosophy arise in ye Mind of any one Person, but improve by Degrees as Arts & Sciences. Thales & Pythagoras had founded their Schools about 200 Years before this Time; nor was it long before ye human Frame & Mind were considered proper Subjects for Philosophy. Alcmeon, a Disciple of Pythagoras, is recorded as ye first that dissected Animals, and Empedocles another of his Disciples acquired Fame as a Practitioner in Physick, but ye human bodies were not dissected before ye time of Hippocrates. It was a long time before Hippocrates ye Philosophers were Interlopers in ye Practice of Physick, and stood in opposition to ye Priests. An Instance of this we have in Heraclitus, who was refused the assistance of the medical Priests when sick. Empedocles & Acron's Disputes are likewise recorded. This was ye State of Physick when Hippocrates appeared. We suppose that Philosophy was introduced into ye Schools of Physick about his Time, and if this be granted, he will naturally be esteemed ye Founder of it, tho Celsus differs from all others when he says: primus Sapientiae Studium a Medicina separavit. We find nothing concerning this in ye Writings of Hippocrates nor is he mentioned by his Cotemporaries. Soranus, an obscure Writer, who lived about 460 Years after Hippocrates, gives us a History of Hippocrates, but contains at ye same time such Improbabilities & manifest Improprieties, that we cannot trust him. The same objection may be made against Galenus & other later Writers. Nor can we judge of it by Hippocrates's Writings as many of these are said to be spurious. If we take his Observations only, he appears a great Dogmatist, but take all ye Writings attributed to him for his own & he appears a most frivolous ~~Ph~~ & trifling Philosopher

Our Opinion of Hippocrates.

I imagine he lived earlier than what is generally thought, and of consequence in a leſs enlightened Age, than what he is said to have lived in. He was born & bred in Theſsaly, remote fm Athens at that Time ye Seat of Literature, and where a moderate Share of Abilities would acquire him great Fame, which if no material Revolution happened, might by his Disciples & concurring Circumstances be raised to such a Height, as to make succeeding Ages look on him as a Prodigy. —— If the Writings imputed to him are all taken together, they appear absurd & ridiculous; but select them & we find Observations made wt Accuracy & Sagacity. But we can scarce take all that are attributed to him, to be his genuine Works —

The first & third Book of Epidemics contain an accurate Narration of Facts, the other Books on Epidemics are trifling. —

His aphoristical Works contain excellent Matter, but not so valuable as generally thought, and have now lost much of their original Importance, owing perhaps, in part at least, to ye difft Climates. Few of his Works besides these deserve any Notice. They contain single Paſsages of some Value, but wout any method or System. We conclude him to be a great Man, but do not look on him wt superstitious admiration. It is very strange that Monsieur Laurie a french Writer, in his Book where he compares ye Medecine of Hippocrates wt ye of Boerhave & other modern Writers of Eminence, should give him such a prodigious great Character and exalt him above all others. Even soon after his Death Erasistrates & Herophilus, his Followers, differ'd from him, and a Proof of his Dogmatism is Serapions exclaiming against him. His Fame would have been of shorter

D
of
no
con
of
of
ar
sid
an
is
Ae
bo
Sy
ca
in
ha
the
they
be
oth
an
he
The
wh
la
I
who
B

Duration, had not Galen been at ye pains to explain many of passages, and regard him always as a Prodigy — We now return to give an Account of **Dogmatism**, which continued in Hippocrates's Family for some time in ye Persons of his Sons Thessalus & Draco, and his Son in Law Polybius; of ye former two we know very little of ye latter some Writings are still extant. Diocles Carystes is a Dogmatist of considerable Fame. Praxagoras was ye last of ye Asclepiadi, and a Man of greatt Fame. The Advantage of Dogmatism is

Herophilus & Erasistratus dissected Bodies & cultivated Anatomy, both were Men of Genius & Sagacity, and put ye dogmatick System on a better footing, than ever it had been. They were cautious of dogmatising in most Cases, and applied it only in organic affections or Diseases of ye Solids, whereas it had before been applied chiefly in Diseases of ye Fluids, they also paid regard to observation & Experience. Erasistratus was afraid of employing many Remedies; the other enquired more particularly into ye Action of Meds, and thereby furnished the Hint for establishing Empiricism. he cultivated anatomy w. great assiduity.

This Period was ye Age of Philosophy and Taste especially towards ye end, when Herophilus & Erasistratus bid fair to put Dogmatism on a lasting footing; but this was soon interrupted by ye Empirics. Here I observe that there must always have been Empirics, or Men who cloaked their Ignorance under ye specious Name of Empiricism. But this was not ye Case with ye prest. Set of Empirics, who

sen
wa
too
Sen
diff
Sat
wou
y. a
sup
fr
pa
for
Ove
then
wa
wh
he
Cla
for
Bo
co
they
Ge
lo
Ja

seem to have embraced Empiricism from Conviction that Experience was a sure Guide, and therefore rejected Theory. There are generally two Persons held for ye founders of it, Philinus of Cos, and Serapion of Alexandria. Each might have a Share, tho they had difft Motives. We shall endeavour to trace them: We have observed before that Herophilus was sparing of his Theorys, and this would probably be ye Case wth Philinus, who might perhaps carry ye matter still farther in rejecting of Theorys; but then we cannot suppose yt he should forsake his Master all at once and desist fm any anatomical Enquiries, which his Master had more particularly studied; it is probable therefore Serapion was ye founder of it. He lived in Egypt, a People who have always had a great Aversion and horror to touch dead Bodies; we may easily conceive then in what Light they must look on an Anatomist; it was therefore probably policy in Serapion to reject Anatomy, which is indispensably connected wth Dogmatism. But he did not entirely finish ye Plan, this was done by Clodius, who likewise furnished ye Name to ye Sect. The following was ye Plan of their System, wch consisted of 3 parts: Observation, History and Analogy, but as they found that one Man could not ~~to~~ make sufficient observations to practise properly, they were therefore to collect all ye Observations of different Persons and compose a History; but as this required a long time they proposed to reason by Analogy, Transitus ad Simile as they termed it, untill they could do without it

This Plan of theirs is specious, but I shall not now consider ye Merits or Demerits of it; but proceed to consider ye state of Medecine in ye 3 Period, or during Empiricism—

It will seem strange that we have nothing at all to say of them: they neither checked Dogmatism, nor did they make any Improvements in Medecine or had greater Succeſs than ye Dogmatists; we have never heard of their boasted History of Observation; if they had wrote any such thing it would certainly have been delivered to Posterity. Empirics however have always subsisted, and Empiricism has always afforded a Refuge to Dullneſs, Craft and Lazineſs, under which they took shelter, never imagining that to study even Empiricism properly, it requires as great a Genius as Dogmatism. The Dogmatists still subsisted during this Period, but in small Sects taking their Name fm different Leaders: as Hippocrates, Erasistratus, Praxagoras, Herophilus &c.

Period 4th. Rise & Progreſs of the methodic Sect

This took its Rise amongst ye Romans. We shall consider in a few Words ye Rise and Progreſs of Physick in Rome fm its first beginning. Rome began fm ye most obscure and mean State, and was at ye beginning engaged in continual Wars, neglecting all Sciences, nor could it be expected that Sciences would thrive in such a State. Pliny says Medecine was not practised at Rome for 600 Years after its foundation and Cato ye Censor prescribes Incantation for a fractured

Rome. But some time before this, ~~about 533 years after ye foundation of Rome,~~ the Esculapian Superstition had been introduced by ye Priests, who had Temples near ye Tiber, as appears fm some Medals transmitted down to us. Artagarchas a Grecian, came to Rome about 533 after its foundation; he was a great Surgeon, and was at first received wth great favour but lost it soon and was banished fm ye City, wt all ye other greek Physicians, according to ye Accounts given by some; this was perhaps owing to ye manual Operations, for which all uncivilized Nations have a great Antipathy. It is probable they regaind favour by degrees. The first greek Physician we afterwards find mentioned was Asclepiades, who came to Rome, as many other Greeks did, to make his fortune. He first appeared as a Rhetor, and tho well fitted for ye Profession, yet he did not succeed; he then commenced Physician, for which some say he was not all prepared; but his pompous Name should induce us to believe ye contrary. He became a Dogmatist and formed ye human Body to his own Fancy, and invented a peculiar Language. He professed to cure cito, tuto & jucunde. He took care to give ye patients no new pain by loading them wt Physick, but permitted them all ye Luxury they could wish for, allowed them Wine, gelid Water &c. He succeeded surprisingly by his specious Manners, Boasting and easy Physick, and no Wonder, for we find them succeed even at this Day. He was even believed to have

Fac

and

Size

sup

or

the

Pr

to

one

The

in

spe

qua

P

See

as

Pr

---

one

Bi

Ec

Pe

ou

raised a Person from ye dead. He had contrived a subtile Theory, and imagined the Body was provided wth Pores of different Sizes and figures to let out particular Things. *Themison* suppressed it in part, as he perhaps saw ye futility of it, or had not ye parts of Asclepiades. He brought every thing to ye Strictum or Laxum, and therefore only considered the Pores as either too large or too small, and therefore either to be widened or made smaller. His Plan was by way of eminence called ye Method: they did not reject Experience. The strictum & laxum has been frequently employed since in Physick, and we shall perhaps have an opportunity to speak of it afterwards. This Sect arose in ye Reign of Augustus Caesar, and was somewhat improved by Thessalus, ye Physician of Nero. I shall now mention a few of ye lesser Sects, but without giving any particular Account of them, as their Doctrines had no Influence on Medecine at ye time.

Pneumatic Sect founded by Athenaeus. I mention this only for ye sake of Aretaeus, who has given us ye best History of Diseases.

Ecclatic Sect. They declared against adhering to any particular Person; ye elegant ~~of~~ Celsus was of ye Sect, and every wise Man ought to embrace their Plan—

Episynthetic Sect. Of this we have so few Acc.ts, that we scarce know any thing about them; their Plan seems to have been to combine ye. diff.t Dogmatists, who often differed rather in Terms than Sense.

We proceed now to ye. 5th Period, but before we give ye. State of Physick in yt. Period, we shall premise some particulars concerning Galen, who was so long ye. Tyrant of Physick. He was a Person of Merit, but his fame was rather owing to a Train of Accidents than peculiar Merit.

Nico ye. Father of Galen, was a Man of Wealth and Literature, and gave him an Education formed on a general Plan, which was very lucky for Galen; after ye. Study of Philosophy, he commenced yt. of Physick, wh. he prosecuted under several Masters, by which he had ye. Advantage of hearing diff.t Opinions; to all this he joined Travelling. He was peculiarly sollicitous to encrease ye. Materia Medica, and very curious in Anatomy. Thus possessed of all ye. Learning requisite to make a Physician, he repaired to ye. Capital of ye. World, where he found many Physicians, all engaged in acquiring practice by ye. usual Arts, extolling themselves and running down their Rivals; it was his fate not to succeed, and therefore after staying there 4 or 5 Years he returned to his native Country. He had however gained ye. favor of some Men of Science and recommended himself to ye. Patronage of some of ye. higher Class, probably also they would do Justice to his Merit after his Departure

But he was recalled by Antoninus & Lucius Verus, where he acquired ye greatest favor of ye Emperor & ye Empress Faustina. He had a great Share of Learning and notwithstanding his great practice still continued his Studys, and happily for ye publick, wrote a great deal. He was virulent against his Adversaries and vain, which tho he might have some reason for it from ye former Behaviour, yet sullied his Reputation. This contributed to suppress all ye Sects then established. The empiric Sect was before on ye decline, but he ran down & intirely ruined the methodic Sect, whom he called Thessalus's Asses. — Dogmata are easily transferred, he therefore embraced those of Hippocrates, and established them by his great Reputation, high Rank and great Authority, by which he suppressed all ye other Sects; by ye Number and Quality of his Writings, as he wrote more than any one before him, and gave them such a Connection, as to form a compleat System of Medecine. It was not surprizing yt Galen should make this universal Progress. Systems are always prejudicial to Science, as the lazy find in them a kind of common place Book without much Study, and the endeavours of modest Genius are checked by them. Barbarism soon after reigned over all ye World, by which Galens Physick remained undisturbed for many Centuries. Actuarius is as perfect a transcriber from Galen as Oribasius —

In this Interval ye roman Empire in ye West was overrun and entirely ruined by ye Goths, and all ye Arts and Sciences, or rather their Remains, went to ye East ~~whether~~ where they continued for some Time. In ye 7th Century of ye Christian æra Mahomet arose and overrun great part of ye East, took and destroyed Alexandria, and as ye Saracens or Mahometans were equally Enemies to Literature wth ye Goths, they destroyed ye Library Alexandria wch at yt time contained almost all ye Learning of ye East; by which Physick was reduced to ye lowest Ebb about ye middle of ye 7th Century. Mahomet is said by some to have favoured Medecine, but it does not seem he had any particular regard for it, at least he left no Traces of his favour. It was owing to ye Califs of ye Race of ye Abbasidi that Physick regain'd some ground, as they bestowed some favor on Sciences, and recovered many of the greek Authors wch they had translated into ye syrian & arabian Languages. They fell first on Aristotles Works, and in consequence of that, on Galen, whose Physick had much of Aristotle interwoven wth it, and was soon dispersed over ye whole Mahometan Empire. They Arabians made few or no Additions but what must have been made of Course. What new things they have consist chiefly in some new Diseases and in consequence new Remedies adapted to those Diseases. They neglected Anatomy from an Aversion ~~for~~ to touch dead Bodies, peculiar to all ye eastern Nations. Tho they had

ye Knowledge of Chemistry, they applied it so little to Medecine, as scarce to deserve mentioning. They made some Improvements in Surgery, which must always happen in manual Exercises. The Arabians brought Learning again to Europe. They cast over into Spain, where they established Schools, from whence Literature was spread all over Europe. This was at ye end of ye 11th & beginning of 12th Century, at this Times Universities began to be founded, of which that at Salerno was ye first, where ye Schola Salernitana was published and by it we may judge of ye State of Learning at yt time, and ye Works of Constantine, who was a Professor there, will likewise give us an Idea of it. Montpellier & Paris were founded sometime after. Till ye end of ye 15th Century, Medecine was entirely taught on ye galenical Plan: they knew little of Hippocrates or even ye original of Galen, but commented on Rhazes and Avisenna untill ye beginning of ye 16th Century, when a considerable Re~~formation~~volution happened, which was prepared by ye following particulars: Early in ye 15th Century a Taste had prevailed for ye fine Arts in Italy, but this was not considerable or spread universally untill 1453, when Constantinople was taken by ye Turks; which occasioned all ye Men of Learning to come to ye West, who brought to them all ye Learning of ye Ancients. People read and admired ye ancient Greeks, and towards ye end of ye Century Greek became a fashionable Study. Printing being discovered in

1460 contributed much to encrease Learning and advance ye Sciences. The civil Policy of Europe likewise took a diff.t turn in Henry ye 7th by the civil Wars of England ended. The diff.t Provinces of France were united by ye Marriage of Louis 11th with Anne of Brittany. The Kingdom of Spain was united under one Person. Columbus had discovered America and a Passage had been found to ye East Indies by ye Cape of good Hope. These affairs must certainly have some effects on ye Minds of Men, and enlarge their Views. As ye Greeks began to be better known, ye Arabians lost in Reputation, but not before great Disputes had long been carried on. But ye Greeks had scarce triumphed over their Adversaries, when Physick they were again violently agitated by ye appearance of Paracelsus, who was ye occasion of a new Revolution in Medicine, which shall be comprehended under

Period 6th

Chemistry had been little employed in Physick; it was entirely in ye Hands of Quacks and Alchemists who improved it a little. The Lues venerea which had then appeared in Europe yielded only to Mercury, and ye Virtues of Antimony had been newly discovered, when Paracelsus made his appearance. He was bred under chemical Professors, on an empiric Plan, and travelled afterwards w. an Intention to encrease his Knowledge, by which he discovered powerful

Remedies, adapted to Diseases, which at y^{t} time did not yield to their common prescriptions. His fame encreased in such a Manner y^{t} he was called to a Profeſsors Chair at Basil. He run down and abused y^{e} Ancients conſtantly. He was y^{e} Author of a new Sect, that exploded y^{e} Doctrines of Galen and introduced a quite different Syſtem of Physick. The Chemists were disunited for a whole Century after Paracelsus Time, and were generally illiterate & Men of mean parts; had much confidence in Nostrums & Astrology. This was y^{e} Case of all except Van Helmont, who was a Man of parts & Learning. Their practice was likewise of little Value, and y^{e} worst kind of Empiricism. Van Helmont came rather too late to be called the exploder of y^{e} galenical Physick; for at his Time had already met w. many severe Shocks. Berengarius a Carpi had revived anatomical Diſsections, Vesalius tread on his heels, and he was soon followed by his Disciple Euſtachius; by the Discoveries these made, a severe Shock was given to y^{e} Syſtem of Galen; but y^{e} entire overthrow of it was chiefly owing to Ariſtotles Philosophy being exploded, on which Galens Syſtems was founded. Galileo & Bacon led y^{e} Way in Philosophy, Gaſsendi and DesCartes gave y^{e} finishing stroke to it. The Fall of Galens Syſtems was y^{e} natural Consequence of y^{e} Fall of Ariſtotles Philosophy. Fernelius and y^{e} ſyſtematic and eclectic Sennertus lived about this time

Period 7th

The Discovery of ye Circulation & thoracic Duct, gave ye finishing Stroke to Galen. A liberal Enquiry began to now take place instead of a servile Attachment to one person. The Royal Society began at this time to have their Meetings, and took for their Motto Nullius in Verba, which was then ye universal Motto. The Progreſs of Philosophy, &c. is connected to every Science, under Galileo, Bacon, Father Marseille, Gaſsendi, Des Cartes & Boyle, opened ye Eyes of Men. Newton was ye Leader in Mathematics, Boyle in Chemistry. Physick improved by ye difft Systems, Gaſsendi and De Cartes systems were both favourable to Chemistry, the former took into his System acid & alcali, ye latter added Lentor, some Mechanics and Physiology. The Circulation however had not yet made any great Progreſs. Mathematics began to be employed in Medecine, and first by Borelli, who wrote an ingeneious Book, but was no Physician; but his Disciple Bellini employed it both in Physiology & Practice. The mechanical Physicians were always declared Friends to Experience and Observation; it is this that renders ye Theorys of ye present Age innocuous; a proof of which is Sydenham, who practised wt great Succeſs without running into any particular Theorys. He was opposed by Willis, Morton & Lister, who depreciated his Practice, but his Works were greatly

by Pitcarne & Boerhave, both mechanical Physicians. The mechanical System however is greatly insufficient for a perfect System of Medicine. The Mechanist rejected Chemistry almost entirely. At this Time ye great Boerhave appeared; he was of no Sect; but took what he thought proper from each, and ye rest he rejected. He took ye Doctrine of Obstructions & Lentor from Bellini; ye Acid and Alcali from ye Chemists & Plethora from Galen, ~~and~~ happily combined ye whole & proved a most excellent Eclectic. Perfection however is not ye Lot of Man, this appears in Boerhave, for he entirely left out ye sentient Principle. This was first introduced by Stahl, tho it had been mentioned by Plato, Dolaeus and more particularly by Wepfer. The System of Stahl gives a particular explanation of ye autocratia, but they omitted all Anatomy & mathematical Reasoning. In consequence of ye Autocratia they always had a feeble practice, but excell in ye Historys of their Diseases. They were attentive to ye Nervous System, in consequence of ye Opinions they had adopted of ye Soul.

Willis was ye first who gave a Doctrine concerning ye Nerves; but so extravagant in his Theories, as to be followed by few.

Baglivi had a theoretical Genius, but was at ye same time a good Observer. His Life was short, and he died before his System was well understood, and therefore was afterwards neglected.

Hoffman carried ye Matter farther and studied ye Nerves particu=larly. Some of ye Disciples of Boerhave, who perceived their Masters Deficiency in this Respect, have made Amends for it, by prosecuting ye Subject to great Attention: these are Vanswieten, Shaw Boerhave, Gaubius, but above all others Haller has occasioned the greatest Enquiries to be made into this Matter, by his Book De Irritabilitate — As ye human frame consists of a chemical Mixture, hydraulic Machine and nervous System, our present System of Medicine seems to be compleat, as is built on ye Prin=ciples of those difft Systems; and is now on a dogmatical plan, but the greatest regard is paid to Experience and Observation ——

I shall now add a few Words on ye Writers that may be consulted for ye Theory of Medicine. — Of ye Ancients we have none remaining, untill ye Roman Authors, except Hippocrates or ye Works generally attributed to him, but some of them appear evidently to have been wrote later than ye Times of Hippocrates. From these therefore we cannot judge what ye Theory might have been at different times. The Empirics left us no Wri=tings at all. Of ye Dogmatists none remain but Celsus, who contains many fine things. Of ye Methodic Sect we have Cælius Aurelianus, wh is a very valuable Book as it contains more practice than any other of ye Ancients; but he gives us no Idea of ye methodic Sect, wh we have best in Prosper Alpinus. The

Nature of ye methodic System has generally been mistaken by ye Moderns. <u>Galen</u> Contains in his System many particulars of our modern Systems, when Leisure therefore permits it may be worth while to look into him. Of all those that have commented or wrote in ye galenical Manner, Sennertus will serve best. Besides him you may consult Caesalpinus, Fracastorius, Septalius, Nicolaus Piso, and Riverius who contains ye whole of what Sennertus and other have said. Fernelius & Platerus are worth reading, as they recede in many things from the common Opinions of those times, and were Men of original Genius. Of <u>ye chemical Sect</u>, I know not one ye I would recommend to your perusal, as I have not patience myself to read any of them, but consult ye Encyclopaedia of Dolaeus, who gives us ye System of Van Helmont & Paracelsus on any particular Disease. The <u>Cartesian System</u> appeared first in Henricus Regius, but is more fully explained in Blancard & Waltschmidt especially ye former. We have Systems variously mixed of ye Cartesian and chemical, in those of Willis, Sylvius, & Ettmuller; and tho their theories are forsaken, yet they were Men of great practice, and good things may therefore be got out off them. At present we have still three Systems remaining: Stahls, Hoffmans and Boerhaaves. Stahl had many followers who all gave us his System, but we find it best explained by Juncker, who is ye compleatest Writer on ye System; but ye System itself we have best explained in Stahls Theoria medica vera; which contains excellent, but

very abstruse Matter. Stahls Books will give a Person ye habit of thinking as well as Mathematicks or playing at Cheſs. The followers of Stahl have all a bigotted attachment to their Master and are very virulent in their adversaries; this is not ye case wth Hoffmans, who had some excellent Disciples as Tralles, Schultz & Werlhof; but none of these have given us any particular Syſtem in their Works; this is best got from his own voluminous Works, which contain many good things. Boerhaves System is fully evolved in Van Swietens Commentaries. De Gorter has made a little addition, but entered into all ye Subtelties of mathematical exactneſs, wch Schreiber has likewise done, we have therefore not loſt much by ye Death of ye latter. The Stahlians are ye only one yt at present form a Sect, much bigotted to their Master and virulent against others, wch is not ye Case wth Hoffmans or Boerhaves. Boerhave had a number of servile Admirers, but even these recede from him, except Van Swieten who adheres cloſe to his Maſter.

Remarks on ye State of Physick in ye several Countrys of Europe

Italy. In this Country ye polite arts & Sciences were firſt reſtored, and in consequence Galen was ye Person followed there, whom they adorned wth all ye erudition they were Maſters of. Untill ye middle of laſt Century Italy was ye School for Physick. They then became Chemiſts

and soon adopted y^e Cartesian System. Since y^t time they have been mechanical Physicians, but w^{in} these 30 Years Boerhave is much admired by them —

The French have y^e Merit of first exciting y^e Study of Hippocrates, but at y^e same time became Galenists, and continued so very obstinately. They had Chemistry suppreſsed by publick Authority, w^{ch} ought never to interpose in Matters of Physick. But Cartesius gained easy Admittance and continued for y^e last Century. In y^e present Age they were more mechanical, and within these 30 Years fanatically fond of Boerhave. Sauvages has endeavoured in his System to combine y^e mechanical & Stahlian, w^{ch} I think incompatible. The Baglivian System appeared very ~~well~~ early in France especially in Hecquet. In Germany the chemical Sect prevailed early & entirely untill y^e Times of Hoffman & Stahl, and in both of their Systems Chemistry insinuated itself very much. The mechanical System never made great progreſs. Heister and Ludwig adopted it, y^e latter has added to it Irritability & Torpor. Van Swieten being at y^e Head of Medicine at Vienna, Boerhaves System prevails there —

England. There never was any regular School of Physick in y^e Country. And as y^e english generally incline to think for themselves, there never was any regular Appearance of a System amongst them, but always a strong Biaſs to Empiricism. They were Galenists untill

ye. beginning of last Century when Sir Theodore Meyern introduced Chemistry. Harvey nor Glisson followed no System — Bennet was by Boerhave denominated ye. Heraclite Doctor, but this apellation might be bestowed on many — The mechanical System is at present most common and Boerhave prevails very generally. Morgagni, Senac, Haller & Pringle never attached themselves to any Sect —

Lectures on yᵉ Theory by Dʳ. Wᵐ. Cullen

Physick has always been pursued on diffᵗ. particular Plans, and is even now practised, or profeſsed to be practised, on a particular Plan. I shall endeavour to propose a Plan to you, which you can follow if it meets wᵗʰ. your approbation — I take it for granted yᵗ. every Gentleman who comes to this Claſs, is prepared for it wᵗʰ. Anatomy, Physiology and Natural Philosophy — I shall now give some general Conclusions and my reasons for them. The Study of Physick may resolve itself into two Views. 1. What and how far it is proper to be studied. 2. How yᵉ needful may be acquired. The first Question, What it is yᵗ. is to be learned under yᵉ Name of Physick ariseses from yᵉ Diſsensions between yᵉ Emperics & Dogmatists, and has subsisted ever since yᵉ Rise of yᵉ dogmatic Sect, nor is yet determined; they often litigated but always entered but very superficially in yᵉ Matter. An Apothecary for Instance will have it that nothing can be done wᵗout knowing yᵉ Cause &c of Diseases, and talks much of yᵉ rationale of his practice, another who thinks he knows best and has had great Experience, calls all Theory a pack of damned Nonsense — If you want to know yᵉ Arguments on either Side, you will find them elegantly said by Celsus ~~de Er~~ in his preface ~~de~~ empiricis, Clerck is a more modern Writer, a thesis has likewise been printed lately at ~~Lipsick~~ Leyden on this Subject, but Kohnius of Lipsick is yᵉ only yᵗ. I know who wrote de Experientia fallaci. In order yᵗ. you may judge yᵉ better of yᵉ Manner of studying Physick, I shall adduce all yᵉ Arguments yᵗ. are or can be made use of on either Side and compare them, by which you will know yᵉ Value and defects of each.

Nature of y^e two Plans

The empiric Plan consists of 3 parts: Obſervation, History & Analogy; the two first lead to simple Imitations, but when they had not a previous Experiment they had Recourse to Analogy. It is therefore unfair to call Empirics irrational and Dogmatists only rational, for they Empirics could not proceed a Step w^tout reasoning. But they neglected to enquire into y^e particular State of y^e body, and how Med^s. operated in order to produce a Change—

The Dogmatists in y^e Case of every Disease distinguish it by Symptoms, but always enquire into y^e Causes on which these external Symptoms depend. They enquire into y^e State of y^e Body, and from knowing y^e State of it they form their Indications. This Enquiry resolves at last of knowing y^e Condition of y^e body in a sound State or Physiology, w^h has therefore been considered as y^e proper Theory of Medecine—

Objections against y^e dogmatick Plan.

The Arguments against it have generally been drawn from the Imperfections of Physiology; you will easy conceive then that these Arguts will vary constantly; but they produce Arguments against Dogmatism much stronger than these; it is alledged y^t y^e very foundation is unsound; some fm Imperfections, others from y^e very Nature of y^e Matter itself, which does not admit of Certainty. Here y^e Empirics have brought all y^e Arguments y^t can be made against Speculation, Thought and human Reason. But I shall paſs over those and mention only y^e Arg^{ts} y^t can be brought immediately against Dogmatism, and this I shall do w^t y^e strictest exactneſs and severity. The Human frame may be considered in different Views, these may however be distributed under 3 heads, under which we shall now consider it—

1. *As a mixt*, or Matter poseſsed of particular Qualities, and so far an Object of Chemistry; under this head ye Nature of animal fluids comes to be considered, ye Changes produced on them by Air & food: the difft. Changes of this food into ye several fluids, and the consideration of their being fit to repair ye Waste of ye solids, which leads us to ye Knowledge of ye Solids. This then is ye chemical part of ye System of ye animal Body.

2. *As these fluids* are contained in certain Veſsels and kept in continual Motion. And so far the animal œconomy has something in common to ye Vegetable, wherefore they are both called organic Bodies: This comprehends ye Heart, Arteries, Veins, Lymphatics, Lungs & alimentary Canal, and leads to ye application of hydrostatics, but especially hydraulics. And may therefore be called ye hydraulic —

3. *Viewing it as an animated System*, that has Thought excited, and produces Motion in consequence of ye Thought, which has its Seat in ye Nervous System. It may therefore be considered as a *Chemical Mixt*, *hydraulic Machine* and *animated System*. I shall now bring ye Arguments against, and first considered as a *Chemical Mixt*. This therefore depends on ye State of Chemistry, which I must confeſs to be in a low State as a Science or Part of Philosophy, and is mostly practised on an empiric plan. The Doctrine of Qualities and Causes are brought to very little. We have gone much farther in ye Philosophy and firmly established Attraction & repulsion, ye two primary Qualities of Nature; but we know very little yet of ye application of them. I think we begin to view on what Cause Attraction depends but as to elective Attraction we are quite ignorant. About repulsion or ye power of fire we are to this day disputing, and are not yet agreed whether it be common to all Bodies! A fine Sett of Crysts are ye result of our Enquiries —

But ye animal Mixt has its peculiar Qualities that render it more difficult than any other parts of Nature. The constituent Qualities of ye. animal Mixt are still unknown to me. Animal Blood is wt. respect to Chemistry sui Generis, and our Art has not yet been able to imitate any part of it. It is not yet known & perhaps never will. Fermentation is peculiar ~~and~~ to ye. vegetable & animal ~~System~~ Kingdoms, it is this yt. gives a difference to ye. different animal Substances. But fermentation is still a Mystery of Nature, and untill this is understood ye. animal System will remain unknown. Another difficulty yt. occurs is ye. operation of Nature called Secretion if we could take ye. Ideas of it from ye. Separation made by a Sieve we might hope from some Elucidation, but there is something peculiar in it yt. hides its effects from us. From ye. whole then of this Consideration, ye Theory built on Chemistry must be imperfect. Hydraulics. Mathematics give as great Certainty as human ~~Reason~~ Nature will allow. But after 100 Years Experience in Physick we find it fall short of our Expectations. It is difficult to find ye. application of Mathematics to Mixts, and general principles have not yet been established for ye. application of Mathematics to ye. animal oeconomy. Many have indeavoured to calculate ye. force of ye. heart, but none of them agree in their Calculations. There is even to this Day nothing determined wt. regard to Revulsion or Derivation; therefore our mechanic System, as ye. principles are still disputed, stands on a tottering foundation. But supposing they were ascertained, ye. data necessary for ye. application are still unsettled e.g. the force of ye. heart, ye. Lumen of ye. Vessels &ca. This leads me to observe yt. in Anatomy our Science triumphs; but is even here very imperfect, notwithstanding ye. accuracy of ye. Anatomists. It gives ye. grosser parts very well; but ye. minuter

y. manner of

and more subtile are still undetermined e.g. The organs of Secretion, we
e Vessels which are in ye bulk like many others in ye body, we know
to yt ye are destined for Secretion, but we are still ignorabl how yt
Secretion is carried on, nor do we comprehend ye manner and how far
onnected wth. ye other functions of ye body. In ye Organs of Motion
natomy is unhappily defective; we see ye Contractions performed but
are still at a Loss to know ye Cause, wh. is in fact owing to our
Ignorance of ye Structure of ~~animal~~ ye ultimate Fibres — Lastly I shall
allow we obtain beautiful & satisfying Theorems; but how far have
we gained in applying them to ye functions of ye body, when there
are not two Moments ye same. Who has recourse to Bellini's
Calculations about Bloodletting made 80 Years ago, when he is to
open Vein —

3. Animated System. The first Consideration arises here from ye
Disputes of ye Stahlians & other Systematics. Whether it is a
rational Soul yt presides over ye functions of ye body and raises
ll Diseases in order to free herself from something worse. The Stahlians
however allow themselves yt she may sometimes be wrong in ye
Means she takes to accomplish this. Gaubius ballances ye Matter in
such a Manner yt you can scarce know whether he is Stahlian
or not. If ye Stahlian theory were to take place, ye dogmatism would
e exploded at once, for then we could not reason on any thing yt
happens in ye body. But supposing we reject this, we must still
allow a sentient ~~part~~ principle, but as we are entirely ignorant of
ye parts acting on one another, we must allow only ye facts wout
nquiring into ye Cause; and no where are greater difficulties to
be met with, than in drawing Theories from these facts. —

the Phaenomena are so varying, yt we cannot comprehend them under any ~~one~~ System. We might expect some Assistance in understanding ye Organs; but no where is ye difficulty greater and here anatomy has fail'd us; we know ye progress of a Nerve, but we do not know its State either at its Origin or Termination. We can see ye expansion of ye optic Nerve, but cant comprehend why it is more disposed to see yn ye auditory Nerve; <u>but</u> we are more particularly ignorant by what means ye Communication of Motions is performed; there ~~have~~ been disputes on ye existence of ye animal fluids, and allowing ye animal fluids, there are disputes again on ye Nature of them — There are difficulties in every part of every ~~[illegible]~~ of every dogmatick System, in one perhaps more, in another less. The Dogmatical plan is then fundamentally wrong, and many of ye particulars are ~~liable~~ likely to remain subject to difficulties beyond ye reach of human understanding and Nature. The dogmatick plan is rendered still more difficult by ye Connection of ye different functions to one another, by which they go in a constant circle. The brain depends for its Subsistence on ye Heart; ye Heart could not subsist without ye Brain. Thus Digestion and Secretion depend not on ye chemical, hydraulic or nervous part of ye System simply; but all of these concur in performing those and all other functions. And if we have found it impossible to explain them when taken distinctly; how much more difficult must be their Consideration and explanation when taken together.

The functions are ye Vital, natural, Animal. The first are ye primary and more essential to Life, without which it cannot subsist ye least space of time. The natural functions are conducive to Life as ye Vital depend on them, for if we were not to eat, drink, sleep &c. ye Vital functions must soon cease; and with respect to both, if we ~~do~~ are not continually in Motion, i.e. exercise ye animal functions both ye other cannot subsist long. This Consideration involves us in to ye same difficulties as ye former, as ye mutual dependance is equally strong here, and in order to understand ye whole it is necessary we should understand each part well. If we add to ye fallacies and uncertainties yt human reason is liable to, the uncertainties of ye very plan and ye number of weak heads, we need not wonder that there are, and there must be, many Errors. There are <u>Consequences</u> of dogmatism yt are almost unavoidable and yet pernicious: 1st It leads to System; which induces Men always to act & reason in ye same Strain. I think System is necessary in all teaching, for to facilitate ye Memory; but as no System can be perfect, it is not adapted to human Nature. The more particulars a System comprehends, ye more liable is it to fallacies, and the more Ground ~~he~~ gains, ye more pernicious it is to Mankind. Of this Galen serves for an example; <u>Boerhave</u> has likewise had his servile followers for these 40 Years, and had he lived at a Time pretty like that of Galen's, it would have had ye same effect. 2d <u>Dogmatism</u> occasions doubts, for it is only people incapable of reasoning yt do not doubt, but here it is generally carried too far, and a Systematic is for ye most part a timid practi-

tioner, and afraid of giving Meds. that may do hurt, and therefore only gives those that are inert; by which he is sure he has not killed ye patient, and he dies Secundum Artem — I shall next view ye Empiric Plan i.e. ye Eyes of a Dogmatist. I might here employ ye common Arguments of Scepticism; ye Sceptic will maintain ye nothing in Sense or experience is infallible; for all experience is liable to fallacy, and Accuracy is ye rarest Quality of human Nature. Suppose even ye Expts to be true, yet we are constantly liable to fallacys in repeating and imitating them. But this is not our business in this Place; we are to object against ye particular Plan of Empiricism, i.e. Observation, History and Analogy. The two first are ye principal parts of ye plan the Latter verges to dogmatism — 1st then It is very very difficult to make such Observations as Imitation requires. For we must enquire into all ye precedents, hereditary taints, remarkable Accidents of Life, tenor and manner of Life, the previous Condition of body and mind, ye immediately exciting Cause; then we are to attend to ye present Circumstances, of which to repeat ye particulars might take me a whole hour; but we ~~almost~~ must also study every thing without him, e.g. ye whole Course of heavenly bodies, in order to know what Influence Weather &c. had; we must then attend to all ye ingesta & gesta, Motions of body & Mind, then a particular Attention to ye Event and if in Death, examine ye appearance of ye body; but this we are seldom permitted. But it is not only ye number of parti-

ticulars, but ye. difficulty of coming at ye. knowledge of ye. precedent, that we have to encounter with. But even of ye. present Circumstances, how many do we miss observing; ho many pass in ye. patients mind, wh. we cannot know; how many gesta, & other Caprices of Nurses, ye. they do not acquaint us with. The difficulties are so great, that I believe there is not one perfect Observation. But it may be argued that many of ye. accidentals may be omitted, granted; but how are we to know which of ye. Accidentals are least necessary to know; it requires a sagacious Man, of ye. greatest Experience to ~~know~~ separate ye. essentials from ye. accidentals. Observation however is still very necessary but then it <u>can</u> never take as simple Imitation, but rather as Analogy, which is at once deserting ye. empiric plan. But Observation is also liable to ye. fallacy of ye. Sense e.g. the Vision of a Patient, but scarce two will observe it in ye. same manner. We have had Theromometers for 150 Years, and is even doubtful whether one faithful Expt has been made. De Haehn has made some of late, but they are questioned. Langrish's Expts are not worth one farthing. What is frequency of pulse; what is a hard and soft, a full, a low Pulse. We count ye. Strokes; but scarce any two will agree about ye. State of ye. pulse, or convey a proper a Idea of it to another

2. History. Every difficulty, Inaccuracy and Mistake in Observation must enter into History; these are much encreased when we consider what difficulty there is in communicating Ideas. Many Symptoms occur wch. cannot be described; many Apprehensions wch. cannot be defined; but supposing they could be described, yet there is such Measures and degrees as cannot be describd; it is very difficult for any Man to describe ye feelings of another; and ye Physician can only have a proper Idea of them from ye patient himself, and will also be enabled to judge from his Behaviour & Gestures. History, however little regard may be had to it, is yet greatly affected by ye Insufficiency of Language; how few Men are Masters of their native Tongue, and how much more must they be insufficient in a foreign Language. But it is not only fallacious from ye Sources already mentioned, but is also liable to great fallacy from Biass & prejudice. Dont we often either from Aversion or Desire, Love and Hatred see Things in a very different Light from what they really are. A Man favours a particular Theory, and therefore turns and views facts from every side untill he makes them square with his Theory. He sees every thing in false Colours, like a Man in ye Jaundice, who thinks every thing yellow. This has been objected to Dogmatists but it holds equally good wt. ye Empirics. If we should believe all ye has been said of Cures performed by such Remedies, we should have certain Cures for every Disease. But on ye contrary we find that Meds. so highly commanded formerly

have either lost their Virtues or never had any. The fallacia Causa pro Causa is as common to ye Empyrics as Dogmatists. But it is from direct fraud and Imposture also, yt Physick suffers; but this I would hope depends generally on ye patient. Has not a german Physician recorded that a Woman vomited up two pretty little living Whelps; and it is not a great while since a Woman brought forth Rabbits in England, and was delivered of them by a Man midwife. These however are too gross and palpable; but there are others where we never distinguish ye real from ye feigned, or never come to ye Knowledge of ye real Disease, by ye Patients hiding from us, what he thinks was occasioned by himself. Besides there is scarce distinguishing often a real disease from an Imposture, and even so long ago as Galens Time this seems to have been ye Case, for he wrote a Treatise on this Subject. But Physicians have also indulged ye humour of Lying; Nostrum Mongers especially, these however we suspect; for ye Vanity of supporting or opposing any particular opinion the Vanity of writing a Book and of puffing. There is one Species of fraud of which a Man is perhaps not very conscious e.g. A Man in his Closet will write down many things which he forgot to observe at ye patients Bed Side, by which he often commits great Mistakes, and therefore ye french Satyric has some reason for his saying grand Observateur, grand Menteur. There have been more false Observations than false Theories; but even

+

takes yᵉ whole with its Imperfections, we generally are at a Loss for similar Cases; in 30 Years practice I have not met wᵗ 3 Cases exactly similar to yᵉ Cases of my Patient. Scarce a fourth of yᵉ Observations extant will apply; they are either not well described, or said to be cured by Remedies, now proved inert. There is nothing so important as determining Questions of fact in Empericism, for 100 Years there have been Disputes which are not yet determined; both parties + referred to experience, if they are determined, both Sides are generally found to be in yᵉ wrong, e.g. yᵉ Peruvian Bark; many Questions that subsisted in Talbots Time are still subsisting. The british Physicians say yᵗ Bark will cure Mortifications, Astruc & yᵉ french are as positive in denying. Mercury Sublimate is found not to have yᵉ Virtues at Edinbʰ it has at Vienna; Disputes about yᵉ Cicuta between all yᵉ rest of Europe and Vienna; but we may allow some differences for diffᵗ Climates, but do not Physicians at yᵉ bede Side of yᵉ patient dispute about facts. With regard to facts, I must relate one special one, by which Physicians and yᵉ publick are misled. This is of Cures made by particular Remedies and attested by innumerable Witnesses of seemingly unexceptionable Characters. Instances of this we have in : S. Soap, Tarwater, Saltwater, Wards Remedies, James's Powder; but we now find yᵗ we cannot do yᵉ same Cures wᵗ them as were formerly said to be done. Upon yᵉ whole I alledge

+

yt Empiricism, wt regard to History & Observation is on a very indifferent foundation. But every Empiric has recourse to Analogy except perhaps a Ward, who never cares one fig for ye Disease, but gives his Remedies, and let ye Disease be what it will, he is sure to cure it. Sydenham always had recourse to Analogy ——

General effects of Empiricism on ye practice and State of Physick. I do this in this place as I think these effects are owing to History & Observation. 1. They have always been attached to Meds of sensible & considerable Operation, wh is ye Duty of every Physician, and therefore ye present use of Poysons is well founded. It happens luckily for Empirics yt a few Cures establish ye fame of a Physician; and Miscarriages are easily excused. + But they do not only satisfy ye Publick, but also ye Physician, who then comes to trouble himself little about any further Observations, and therefore Empiricism has led to ye Neglect of Observation and History, this has led to two other Consequences: 1. they have omitted blood letting, Diet, Motion &c, which require Dogmatism. Both Sects have had their Biass prejudicial to Science. The vulgar have always had a great esteem for Empericks; ye wealthy & Luxuriant for Dogmatists. 2d Consequense: they have often destroyed ye Patient outright, and have not

ye Merit of letting ye patient die secundum Artem. I shall therefore not trust my Life wt. an illiberal Blunderer; I will rather trust Nature and a Physician yt moderates if he can do no good —

I come next to speak of Analogy, but here I think all Controversy ends, for Analogy is reasoning. Celsus complains, when he speaks of an Epidemic Disease yt raged at Rome, yt Analogy is less employed. I shall illustrate what I mean by Analogy: I have frequently met wt. Pleurisys and almost as frequently found yt Bloodletting was of use; if I was now to meet wt a *Splenitis*, wh. has never occurred to me in 30 Years Practice, I would here employ Analogy; but supposing I met wt a 3d patient who had ye principal Symptoms of ye first Disease i.e. Pain in ye Side and difficulty of breathing but without frequency of Pulse, I might do great harm by bloodletting. If I met with a Gastritis i.e. a pain in ye Stomach attended wt. fever, and I knew from Dissections yt a topical Pain & fever indicate an Inflammation, my Analogy would be much more compleat & in a manner general. From this I would conclude yt ye System of ye ancient Empirics was very defective for not generalizing these facts, which we find in ye Accounts of Celsus & Galen they did not. Sydenham ye only Empiric in later Times confined himself almost entirely Analogy and paid no great regard to particular Observations. It is also to be observed yt Sydenham took many of his Principles from Hippocrates and later Writers. for Instance yt *Nature cures Diseases*, and would un-

+

doubtedly continued to have done so, had he lived to ye present Time. It will be obvious yt by employing Analogy we may at length come to have a compleat System of Dogmatism, built on ye very Plan of ye Emperics. We say for example yt Bleeding is good in all inflammatory Di=eases, therefore in a Gastritis, but this is a Syllogism or Reasoning and all our Dogmatism and Theory resolves into particular facts and Induction — Under a Biass to Dogmatism we form Hypotheses,

+ which is an Error of Dogmatism, and when this is done, unless it leads to ye generalizing of facts, it is very wrong. The Analogy of ye Emperics and Reasoning of Dogmatists are ye same; but a Biass to Dogmatism is good and proper, and it is only by laying down general facts and thence ~~proceeding~~ discovering to particulars yt we proceed properly; and never has a general Rule been laid down but it has always been of some use. Even Hypotheses have been employed by great Philosophers (Newton) for this purpose, and are very useful by directing us to particular Observations and Experiments, but then they ought not to enter our Reasonings. There have been some who made Experiments without any regard to general facts (Meuschenbroeck & Pott of Berlin), but it is owing to this yt their Works are so little read, and perhaps no Expts can ever be made properly unless they tend to establish some general Rules. Pathog=nomic Signs have been to this Day very imperfectly observed, however we have got a Nosologia, but very imperfect, and this will undoubtedly lead to observe & collect pathognomic Symptoms wt more accuracy. There have no general Rules been laid down but have been pro=ductive of some good e.g. Chemistry tho it did not apply to ye animal economy, yet we have discovered many fine facts

+

lating to Digestion &c. On this account ye hydraulic System has
so been of some use e.g In Blood letting. de Sylva endeavoured to de-
monstrate Revulsions and Derivations in bleeding by ye Laws of
ydraulics, but it is by those very Laws yt Senac has so learnedly
futed him. If Van Swieten has placed ye Cause of fevers into
mpetum faciens, and Hoffman endeavoured to explain ye effects
f it by ye nervous System, no body will doubt but it has been of
e in Medecine. Reasoning is natural to Man and he will
eason in spite of any Resolutions made to ye contrary. I have
nown some very Stiff Empirics who had Recourse frequently to
nalogy and sometimes to subtile analogy — It is only by
easoning that we can discover false reasoning — It is only win
his Century yt we have been ~~coll~~ proceeded on a rational plan
in collecting facts, and if we do not reap all ye Advantages from
hem we would expect, they may serve Posterity, while we are
engaged in agreeable and liberal Enquiries. Upon ye whole then
We conclude yt Medecine is to be studied on a dogmatic Plan
that is founded on ye empiric. In order to this it is necessary
1st To collect facts and Observations i.e. ye Observations &
History of ye Empirics; and tho (as I said above) they are freqtly
fallacious, yet they are ye only things yt we can go upon. The
difficulties are also in some Measure removed 1st by knowing ye Sour-
ces whence they proceed, and these I enumerated above: 2dly By
a constant Attempt to generalize facts. Facts are to be collected
from Natural History: chemical and mechanical Philosophy,
all ye Arts, from ye Chemistry of Animals, from dissections of

human and animal Bodies in a sound & morbid State; ye facts of our Ancestors and our own being thus generalized will furnish us with a compleat System of Analogy.

Here are ye few Propositions yt I would have you carry along wt you. 1st Analogy is absolutely necessary in an empiric plan; this ought to be constantly extended to obtain more general facts, and thus extended is absolutely reasoning, and if carried a little further constitutes Dogmatism. Analogy, Reasoning, Dogmatism, are all ye same, and are necessary in ye Study of physick; and this constant endeavour to extend it has brought out and will always bring out particular facts, and is ye only sure Means to prevent ye fallacy to wh. all ye facts in our History are exposed & liable to. This reasoning is unavoidable to human Nature we should therfor cultivate it as much as possible. There are Reasons a priori; but we have them also a posteriori, as I told you Yesterday; and if they have already been of use what may we not expect for ye future. From this I hope you will be convinced yt Medecine ought to be studyed on a dogmatick plan, but at ye same time it should take in every thing useful in ye empiric. It must be founded on those facts the Art itself affords us, i.e. History of Diseases and enumeration of Symptoms by which we may obtain a Nosologia methodica. Plater long ago attempted this but without Success, which made it neglected untill Sauvages took it up ye Subject again; since him severals have likewise wrote small Treatises on ye Subject but without adding to it or amending him; but it is yet far from being sufficient

Gaubius in yᵗ part of his Pathology that treats de Morbis ordinandis does not despair of its being one time or other brought to perfection. And I think we may sooner arrive it by studying proximate Causes, as it is now well known yᵗ yᵉ same proximate Cause often produces different Symptoms. If then we are to study proximate Causes Dogmatism will be in its full force. And here I must observe yᵗ notwithstanding all yᵉ Arguments I brought against Dogmatism when I acted yᵉ part of an empiric, it still remains in its full force. And I must here observe also, nor does any body doubt it, yᵗ Anatomy has led to many great Discoveries in ~~Anatomy~~ Medecine, Instances of this are Morgagni and other ingenious Men; for unleſs a Man is properly acquainted wᵗ Anatomy and Physiology he will never make great Progreſs in Pathology. But remote Causes have always been attended to by Empirics, and will any person say that yᵉ Knowledge of yᵉ Qualities of yᵉ Air, physical Geography, of chemical philosophy of fermentation are of no use. Nobody will deny that a proper attention ~~of~~ to and knowledge of these, will contribute much to yᵉ Cure of Diseases. Here then I rest yᵉ general Conclusion in favor of a dogmatick plan; and now return to my first Question, how yᵉ Knowledge neceſsary to a Physician is to be acquired. Are we to proceed in yᵉ old Way by forming a Nosologia methodica, or are we to proceed to proximate Causes. Here I think we must continue in yᵉ ſynthetic manner and teach from general facts as always has been the

ture. I cannot help observing here yt notwithstanding all ye xperience Empiricies speak of, we are still indebted to ye Dogmatists for all ye good in Physick. — Here then I pronounce yt ye nstitutes must be taught on a general or dogmatick plan. — But what becomes of all ye Objections formerly made against ye Dogmatists? These may be avoided partly by knowing ye laces of them, and you will reflect that those objections were ade against a Dogmatick System only, and I teach Systematically merely to keep an order, and no one must expect that I intend to give a perfect System. The Conclusion made gainst ye dogmatick System from all ye parts running in Circle, and that an adequate knowledge of each particular is ecessary in order to know ye whole, may be made against every ystem and Science. I think we may still proceed to teach nd learn the Theory of Physick &c. in a systematical Way.

Plan for ye Study of Medecine. This resolves itself into two parts: 1st Preparation necessary for beginning ye Study; 2d The Study itself. Under ye first Head are requisite: Natural Qualifications or Genius suited to the professional Man of good parts, sound Judgment and studious Disposition; 2dly The common foundations of Literature. There is no Science to be learned in any single one of ye european Languages, the greatest part indeed is wrote in ye latin. The greek is necessary chiefly for ye Sake of ye ancient Literature in that Tongue; a Knowledge of modern Languages. It is difficult to say how far this is to extend. The french is in particular necessary, as ye french and even other Nations write their

Memoirs and Books in ye Language; nor will ye Student lose his Labours if he acquires ye Italian and ~~french~~ german. General Literature: as Logic and Metaphysics; this is proper and necessary to every part of Science; but they are commonly taken too early in Life. Study of Criticism and Morals. If Boerhave was not a better Physician for having before studied Divinity, he certainly was a more ornate one. But it is especially necessary to apply to ye Study of natural Knowledge in general; for this Mathematics are necessary. Chemistry was till lately only taught in ye Schools of Physick, but it ought to be studied on a general plan, and to be extended to ye particular Study of chemical Arts; in doing this ye Student will naturally be led to ye Study of Natural History. Botany has always been considered as a Branch of Physick and may be studied at any time. Zoology at ye time when he studies Anatomy. Mineralogy is founded on Chemistry. The Study of natural History leads particularly to Method. The next Step is Anatomy, which includes ye human and other animal Bodies. This is particularly a Work of Memory; but it is easier retained if ye it be immediately applied to ye Uses Partium, or Physiology. These are properly ye preliminary Studies, we now come more immediately to ye Study itself this is comprehended under ye Institutes and practice of Physick

Gentlemen

The art to preserve health, to cure diseases & to prolong life, has ever been considered of the highest importance. It has therefore been most justly observed that no study can be more interesting to the minds of man; no knowledge more necessary than the science of medicine. Of the goods most desireable in life, health hath ever claimed the first, the most distinguished place. It is the soul that animates all enjoyments of life, which fade & are tasteless without it. A man starves at the best & the greatest tables; is poor & wretched in the midst of the greatest treasures & fortunes; with common diseases strength grows decrepid, youth loses all vigour, beauty all charms & palaces are prisons; riches are useless, honour & attendance are cumbersome & crowns themselves are a burden; but if diseases are painful and violent they equal all conditions of life, make no difference between a Prince & a beggar, and a fit of the stone or the colic puts a King to ye rack & makes him as miserable as he can do the meanest, the worst & most criminal of his Subjects. A Science

therefore which taught the methods by which health could be maintained, our body guarded against diseases, & even restored to health when afflicted with disorders, hath ever claimed a most respectful distinction & we are not surprized that in the first & ruder ages of mankind, Æsculapius the supposed Inventor of Medicine was honoured with Statues, esteemed the Son of Apollo & worshipped as a God. No individual however can claim the honour of being the founder of this Science; we are rather to conclude that medicine from very slender & almost imperceptible beginnings was by the successive labours of ages brought to the degree of perfection in which we now find it; & as the subject is of importance we shall trace its origin as far as it relates immediately to our present purpose. It is highly probable that in the first ages of the world Men would be anxious to discover means by which they could guard against ~~themselves~~ against the diseases to which they must unavoidably have been exposed even in those times. This laid the first foundation of the Materia Medica which is that branch of Medicine which treats imediately of the remedies that are employed for the preservation of health & cure of diseases. This knowledge

must however have been confined within narrow limits in the first ages of Physick, for in those days Accident, Instinct & promiscuous experiment must have been the principal means by which they arrived at the knowledge of remedies. By accident is meant the discovery of medecines undesignedly made, in yᵉ same manner, for instance as what Geoffroy relates of the celebrated peruvian bark." That a number of Trees being blown down into an adjacent lake, gave such a bitter Tincture to the water that no person would use it or any cattle drink it: at length an indian, urged with severe thirst in an intermittent fever, eagerly took two or three large draughts, which cured his distemper & gave such repute to the waters that they were soon exhausted; but when the Lake, filled by the next rains, was found without its bitterness & virtues, it was naturally concluded they both arose from the trees that had been formerly blown into it, & further experience soon confirmed yᵉ truth. Thus we are indebted to accident for one of the most efficacious remedies in the Materia Medica; without which the world would probably have remained ignorant to this day of its great virtues & use. Accident has likewise been the means of introducing many

other excellent remedies into Medicine. By instinct is meant that discretion which in different degrees is diffused through all animals directing them to chuse what is good & to avoid whatever is evil or destructive to them. This faculty is possessed by man in a degree far superior to the rest of the animal creation. We see children & girls who abound with an acid in the stomach eager for chalk, ashes & other matters that will correct & absorb ye acid; & a person labouring under a putrid disease can scarce bear the sight of flesh and other putrescent matters but is desirous of acids & such substances as have a tendency to correct the putrescent disease. By promiscuous experiment we mean remedies found out by indiscriminate tryals neither pointed out by reason, judgment or instinct. Medicine however, like all other Sciences was greatly improved by ye greeks, with whom the custom prevailed of exposing the sick in the market place & on ye highway to give humane passengers an opportunity of examining & relieving the disorder. If the patient recovered it was his indispensible duty to hang up a tablet in the temples of Apollo & Aesculapius, in honour of these Deities who presided over Physick. On this tablet was wrote an account of the disease, with the remedy which performed ye cure. By these means the number of remedies was soon encreased beyond all conception; & the composition of various

substances became boundleſs. This could indeed scarce be avoided at first, while experience was defective, & ye powers of medicine not exactly known. It was then natural to accumulate ingredients of similar virtues, while it was uncertain which deserved the preference. This practice must however always be attended with two great disadvantages: for without a most particular care, discordant ingredients, that will obstruct each others operation, must often be combined together & the most powerful material must have its dose so diminished as to render the whole medicine leſs efficacious. This was carried to the highest exceſs by framing antidotes, to be previously administred with a view of defending against any poison whatever that should afterwards be taken into the body. This gave rise to the enormous compositions of ye Theriaca & Mithridate, compositions that have done an infinity of mischief. Whilst these unmeasurable compositions were in such high repute a due esteem for simplicity could never prevail; & thus the further progreſs of this Science was greatly checked, if not entirely prevented. The great emulation among writers, both greek & arabians, consisted for many ages in displaying their dexterity to inlarge these ostentatious superfluities. And when the arabians first brought the ancient arts & sciences into the western parts of Europe, the universal ignorance that then

prevailed, had immersed men into the utmost darkneſs of superstition, with minds long practised in resigning all trust, not only in their understanding but even in their senses. Under this baseneſs of Spirit it was impoſsible for men to have any confidence in themselves; any reformation was the farthest from their thoughts; the only effort men of busy fancies could make towards fame, was by commenting & expatiating on the philosophic systems, which had been contrived to give an air of wisdom, to what took rise from the imperfection of knowledge & had continued through afectation & indolence. When Chemistry was first introduced into Medicine it encreased instead of diminishing the evil. Panaceas & a variety of ridiculous & afected compositions were then introduced. Physicians now divided themselves into two claſses distinguished by the name of chemical & galenical. Both parties were engaged in violent controversies; their abject submiſsion however still continued. None was allowed to think for himself; but every one was implicitly to submit to the dictates of a Master he had imposed on himself. After learning began again to shine forth in its native lustre & the darkneſs in which all Europe had remained for near 1500 years began by degrees to be expelled, Physicians then became very anxious to discover the remedies with which the Ancients had conquered

#It is therefore not at all surprizing that the Practice of Physick has been at different times not only vague & uncertain, but even prejudicial to Mankind & that it has justly been doubted whether Medicine had been productive of ~~most~~ advantage to Man. Since however a liberal Spirit of Enquiry has been introduced in this as well as the other Arts & Sciences, these errors & the evils attendant on them have been exploded, & the Practice of Physick of modern times rests on the solid & sure basis of experimental knowledge. & as it is my ~~province~~ duty to deliver a course of Lectures on the Theory & Practice of Physick, it cannot be improper to make some observations on the nature & object of such a course; ~~and as~~ as it is that part of your Studies for which a the others are intended & which are only useful as th are subservient to this.

the most obstinate diseases. They then collected the History of Simples from ye writings of Dioscorides, Theophrastus & other Ancients. In this however they encountered almost insuperable difficulties, greater indeed than they were aware of.- For in the first place the Ancients had left such imperfect descriptions of the remedies which they employed for the cure of diseases, that it was frequently a very difficult task to ascertain the particular substance they used, & secondly, the plants of Greece differ considerably from those of the western parts of Europe. This has been ~~for~~ the source of error for a considerable time. Many remedies were attributed to the ancients, with which these could not possibly have been acquainted, & thus without any reason have Med: been introduced into the practice of Physick. The erroneous & superstitious opinion which Physicians formerly entertained of the power of Planets influencing certain plants for the cure of particular diseases has likewise been the cause of many medicines being introduced into Physick which had not the least title to preference from any real virtues they possess. These with other prejudices were so strong as almost to banish all the remedies of considerable efficacy & for a length of time to prevent any new discoveries from being made or applyed. ✠ As many of ye writings on the Materia Medica are chiefly compilations from ye Antients who often introduced Medecines from superstition & generally from a vitiated Theory, it would be highly absurd in us to continue paying that implicit deference to antiquity, which

he
then
sa
of
gra
inte
ap
Ho
per
vir
A
sbs
have
aga
sh
1.
2.
3.
4.
of
the
or
nat
of
the
me

has prevailed too long. Nothing is a surer proof of ignorance than crowded compositions & Lord Bacon has very justly said: that the great variety of Medecines was ye offspring of Ignorance. But tho many errors have arisen from groundless theories, there are not fewer which have crept into Medecine from erroneous & false observations. This appears very evident if we look into practical writers. How often do we find histories & relations of cures being performed by substances which evidently possess little or no virtues. Even very late Writers have been themselves deceived & are deceiving others by imperfect or altogether groundless observations. I have too much charity to suppose they can have any design to impose on Mankind. To guard against errors of this kind it is proper that every subject should be considered under the 4 following heads:

1. The knowledge of ye substance which is employed.
2. The virtues of the Medecine
3. The foundation of these virtues in their sensible qualities & chemical ~~principles~~ properties.
4. The pharmaceutical treatment, or ye best method of preparing & administering them —

The substances employed in Medecine are either Natural or artificial. A knowledge of the former we learn from natural history, of the latter we are instructed by Pharmacy. The 2d head, under which will be treated the virtues of Medecines in curing diseases, as it is the most essential, it will

ngage our particular attention & take up the most con iderable part of our time. Here we shall in the first place quire into the general virtues of the subject, & to what ndications it is properly adapted: Secondly. What diseases t is particularly calculated to cure, under what circum= tances it may be administred, & in what cases it is improper. Under this head we shall necessarily take a view of the diseases incident to the human frame; distin uish them by their characteristic symptoms; give such scriptions of them as will enable you to distinguish ne disease from another & point out the indications hich require the remedies calculated for each disease, the principles on which the desired effect is produced. nde 3dly the manner of operation & in what doses it will be cessary to employ it to produce the intended effects. Under the 3d head we shall examine into ye foundation of these irtues in their sensible qualities & chemical properties. his is the only method with which I am acquainted by hich we can form any tolerable judgement of ye real irtues of medicinal substances. Had Physicians always en on their guard & never introduced a medicine but n these rational principles, our shops & prescriptions would never have been crowded with such a number f useless & insignificant substances. They would never ave ascribed virtues to medicines that are entirely the reverse of what they really possess. A single instance

will prove this. Before Dr. Pringle published his experiments on antiseptics, many of the substances which he proves to have a septic tendency, were generally believed to possess virtues of a very different nature & were for ages employed in diseases in which they must have been attended with very unfavourable effects. Calcareous earths & absorbents were generally used in Dysenteries & even continue by some to be administred in that disease, tho they cannot answer any good purpose whatever, but must frequently be productive of ye worst consequences by increasing ye disposition to putrefaction which is prevalent in the constitution when labouring under that disease —

Under ye 6th head we shall enquire into ye pharmaceutical treatment of the subject, or the best method of preparing the various substances so as to answer the purposes of Medicine with the composition they enter into & ye propriety of the combination —

From this general view of the subject we must conclude that this Science is of ye utmost importance to the Physician, & that no Person can deserve the name of a rational practitioner who has not acquired a competent knowledge of the Materia Medica. It is the Criterion by which to distinguish

he real Physician from the ignorant Quack. The latter will
rescribe Medicines & by chance cure diseases; but he is un-
ble to account for ye operation of ye Medicines he admini-
ters; but a Person who prescribes a Medicine & ~~cannot~~ is
unacquainted with its modus operandi, or is unable to
scertain the effects it will produce on the human
ody, is to be considered as an ignorant Pretender to
Physick. Van Swieten says: It is scandalous for an
Artificer to be ignorant of the Instruments that belong to his
art; & tho a Physician be perfectly sensible of ye changes
hat must be made in the body to restore health, yet if
he be unacquainted with the means whereby this is to be
done, he cannot be of any service to the Patient. Nor is
it sufficient that he should only have a superficial knowledge
of medicines, for unless he is sufficiently acquainted with
their virtues & qualities, he cannot but expose himself to
ridicule by absurd compositions, & instead of bringing re-
lief will frequently add to the distress of his patient.—

But tho ~~the~~ we who practise the healing art in this country have
another powerful motive which particularly interests us to
become well acquainted with the virtues & manner of operation
of medicinal substances & to know the foundation of these virtues.

For we have the greatest reason believe ÿ. Nature has provided ery country with remedies to cure the diseases peculiar it. It would be denying goodness to the supreme being to doubt of it even if we had not indubitable facts to prove it. I could adduce many Instances in confirmation of it; a few however will be sufficient for our present purpose. We know that every country is provided with effectual antidotes against the poyson of ~~y~~ venomous animals. In India where the Naya is the most venomous serpent, Nature has not only furnished ÿ. rad: ophiorhiza, but also an animal generally called Ichneumon & Mungos. This is continually seeking for opportunitys to engage & destroy the serpent; but on being wounded it is sure to find an efficacious remedy in ÿ. rad. ophiorhiza which Nature has pointed out to ÿ. Mungos for its resource. This root is also used by the natives on these occasions, & never fails of curing the bite, provided it be used in proper time. It is well known that the Seneka root & many other plants, the produce of this country, are equally efficacious in curing ÿ. bite of the rattlesnake. The venereal disease was not known in Europe before the discovery of America; it is a prevailing opinion that this disease is the offspring of America: it is even by many asserted that the indians can cure it speedily & effectually without the use of mercury & ÿ. the Lobelia & Ceanothus are the plants they employ for this purpose. It

s but a few years since a remedy was discovered in yͤ
outhern parts of America that is said to be in many
ases superior to the bark, & scarce inferior in any;
ut is particularly useful in the putrid & remittent fevers
which rage in that country. When we consider that yͤ
eruvian bark, the Ipecacuanna, the Jalap, all yͤ richer
atural balsams with many other capital remedies are yͤ
roduce of America, we cannot but be of opinion that
ur own country must likewise poſseſs peculiar treasures.
e are moreover well aſsured that yͤ Indians who inhabit
the northern parts of this continent are very expert in curing,
many diseases incident to the climate. They can employ
no remedies but such as kind Nature has supplied
o them; they are ignorant of the more costly & artificial
reparations which yͤ ingenuity of Man has compounded for the purpose. It certainly merits yͤ most serious
attention & enquiry to learn yͤ remedies with which they
perform these cures. New remedies are daily discovered for
yͤ cure of the most obstinate disorders, & which formerly
baffled every effort. Within these few years there have been
added to yͤ list of ~~Medicines~~ yͤ Materia Medica, the Quassia
the Columbo root, the flowers of Zinc, & very lately yͤ Digitalis,
remedies of superior virtue & efficacy. There can be no doubt
but the northern parts of America must afford many capital

which will be considerably shorter this year than formerly; for as a new & perfect edition of Dr. Cullen's Materia Medica is just published, ~~it~~ which I trust will be generally read & studied, it would be superfluous to repeat what is so well expressed by him. My Lectures on the Materia Medica then ~~will~~ may in some measure be considered a Comment on that book, & by this means sufficient time will be given to go through a regular & compleat course of Lectures on the Practice of Physick medicines, & it is principally owing to the supiness & indolence of the american Physicians that their virtues & properties are not ascertained & established on true principles. It is from the natives of the country that the virtues of medicines are to be first obtained, & by repeated observation their use is to be finally established. This has been the origin of Physick in every country & it will be our own fault if we do not contribute greatly to the general stock; for nothing can be more certain than that a country which abounds with an infinite number & variety of Plants must produce many which are proper for the preservation of health & cure of diseases. It may perhaps be the good fortune of some one among us to be the means of introducing into practice a remedy equally efficacious as the peruvian bark in the cure of diseases. It is at least the duty of every Physician to attempt it & to improve the healing art to the utmost of his power, & a Person who should add such a remedy to our Materia Medica would do a more eminent service than the founders of hospitals, and be entitled to a most honourable distinction among the benefactors of mankind.

After finishing our course on the Materia Medica I shall enter on a course of Lectures on the Pratice of Physick: in this will be delivered the history of ye. disease; ye. occasional predisposing & proximate causes pointed out; ye. various

Symptoms that occur be accounted for; from these a prognosis be formed, & from ye. indications of cure ye. most approved methods of relieving the disease be delivered. The course will be concluded with some Lectures on the diseases incident to children; & as these will be form ~~of~~ from observations made on the diseases of children in this country, I flatter myself they will neither be unacceptible or unprofitable to you—

Gentlemen

The art to preserve health, to cure diseases & to prolong life has ever been considered of the highest importance. It has therefore been justly observed that no study can be more interesting to the mind of man, no knowledge more necessary, than the science of medicine. Of the goods most desireable in life, health has ever claimed the first & the most distinguished place. It is the soul that animates all enjoyments of life, which fade and are tasteless without it. A man starves at the best and the greatest tables; is poor & wretched in the midst of the greatest treasures & fortunes; with common diseases strength grows decrepid, youth loses all vigour, beauty all charms and palaces are prisons; riches are useless, honour and attendance are cumbersome and crowns themselves are a burden; but if diseases are violent & painful they equal all conditions of life, make no difference between a prince & a beggar, and a fit of the stone or the colic puts a King to the rack & makes him as miserable as he can do the meanest, the worst & most criminal of his subjects. A science therefore which taught the methods by which health could be maintained, our body guarded against diseases and even restored to health when afflicted to disorders, hath ever claimed a most respectful distinction and we are not

urprized that in the first & ruder ages of mankind, Osculapius the supposed inventor of Medicine, was honoured with Statues, steemed the Son of Apollo and worshipped as a God. No individual however I can claim the honour of being the founder or inventor of this Science; we are rather to conclude that Medicine from very obscure & almost imperceptible beginnings was by the successive labours of ages brought to the degree of perfection in which we now find it; and as the subject is not nly curious but important, we shall in a few words endeavour trace the origin of Physick — There can be no doubt but that in the ~~first~~ ~~ear~~ earliest ages of the world Mankind would be anxious to discover means by which they could guard against the diseases to which they must unavoidably have been exposed even in those times. This was undoubtedly the first origin of Medicine; it was however at first confined within very narrow limits; for in those days Accident, Instinct & a few promiscuous experiments were the principal means by wh. they acquired any knowledge of remedies. By accident is meant the discovery of medicines undesignedly made, in ye same manner for instance as what Geoffry relates of the celebrated peruvian bark " That a number of trees being blown down into an adjacent lake, gave such a bitter Tincture to the water that no person would use it or any cattle drink it: at length an indian, urged with severe thirst in an intermitt

tent fever eagerly took two or three large draughts which cured his distemper & gave such repute to the waters that they were soon exhausted; but when the lake, filled by the next rains, was found without its bitterness & virtues, it was naturally concluded they both arose from the trees that had been formerly blown into it, & further experience soon confirmed the truth. To this accident then we are indebted for one of the most efficacious remedies in medicine, of which we might otherwise have for ever remained in ignorance And it is highly probable that we are indebted to accident for many other excellent remedies. — By instinct is meant that discretion which in different degrees is diffused through all animals directing them to chuse what is good & to avoid whatever is evil or destructive to them. This faculty is possessed by man in a degree far superior to the rest of the animal creation. We see children & girls who abound with an acid in the stomach eager for chalk, ashes & other matters that will correct & absorb the acid; and a person labouring under a putrid disease can scarce bear the sight of flesh & other putrescent matters, but is desirous of acids and such substances as have a tendency to correct the putrid disease. By promiscuous experiment we mean remedies found out by indiscriminate tryals, neither pointed out by reason, judgment or instinct.

Medicine however, with the other sciences, was greatly improved by the greeks, with whom the custom prevailed of exposing the

In delivering a course of   this will
#. The Lectures on the Practice of Physick, comprehend
that part of your Studies, for which all the other
are intended, and which are only useful, as
they are subservient to this.

sick in the market place & on the high ways to give humane passengers an opportunity of examining & relieving y. disorder. If the patient recovered it was his indispensible duty to hang up a tablet in the temples of Apollo & Esculapius, in honour of these deities who presided over Physick. On this tablet was wrote an account of the disease, with the remedy which performed the cure. It followed however that from this custom both diseases & remedies were multiplied to an excessive degree, and as the Temples thus became the repositorys of Physick, much superstition was ~~necessarily~~ of course blended with it. After a variety and indeed almost innumerable revolutions, Medicine is not only arrived at a considerable degree of perfection, but continues to hold a most respectable station in the scale of Sciences. # ~~In the~~ present ~~arrangement which has lately been made of the medical schools in this City, it has been allotted to me to deliver the Lectures on the Practice of Physick, on that part of your studies, for which all the others are intended, and which are only useful as they are subservient to this~~ There have been Persons who imagined that the Science of Physick might be acquired in the space of some months; but conscientious Men find that the incessant study of years is scarcely sufficient to acquire such a degree of knowledge as will acquit their consciences in the practice of it. Preliminary to the study of Physick are required a competent knowledge of the Latin Tongue, and a general acquaintance at least w. natural

Philosophy. The question has for some time past been much agitated among us whether ~~there is~~ any advantage is to be derived from the study of latin & whether it is in any degree necessary to a medical education. Dr. Williamson, in a letter to Dr. Johnson of New York has endeavoured to explode the idea of the necessity of the latin language, and of all the publications that I have read on the subject he ~~appears to me to have~~ has in my opinion advanced the most powerful reasons & arguments against it. To me however they are not conclusive, and I must continue of the ~~opinion~~ sentiment that in the present state of medical science it is of considerable use to have some knowledge of the latin tongue. It appears absolutely necessary that the literate in the different countries of Europe should have a common language in which to convey their sentiments. From a variety of circumstances, at present not to be enquired into, the latin is the language used in that intention, and hence a variety of books have been & continue to be published on the continent of Europe in latin, that are not translated into english. The works of ~~Hoffman~~ Sauvages, De Haen, many of the most esteemed works of Haller, even Cullen's Synopsis with a number of other very capital books are in latin and will probably never make their appearance in an english dress. And tho there is no doubt but that a person may practise Medicine with success who has never read those performances, yet it is equally true that he would practice Medicine with greater advantage if he had read them. Natural philosophy, as it treats of

and explains the theory of vision, sound, pneumaticks, hydrostaticks and various other phenomena which are indispensible to our wellbeing, is a very useful and indeed necessary science to the medical student.— These we observed were to be considered as preliminary to the study of Physick — the knowledge of the art itself requires that we should be versed in Anatomy, Physiology, ~~the~~ Chemistry & Materia Medica, and the practice with ye history of diseases as delivered in books.— Diseases however are found different from the descriptions delivered of them, and are best known from experience, in the same manner, as we recollect a person we have once seen, better than by hearing many descriptions of him. Hence the propriety and use of attending hospitals or visiting ~~the~~ private patients under the direction of a judicious Physician. Anatomy as it teaches us the structure, conformation & situation of ye different parts of the human frame, which is the object of the physician's care & attention is very properly considered as a most essential ~~part~~ branch of the science of Medicine & the foundation of the other ~~parts~~. Physiology which teaches the functions of the different organs & parts, and how they are performed in a healthy state of the body is very intimately connected with Anatomy and is indispensibly necessary to be understood; for how are we to restore health & vigour to a diseased part, if we are not perfectly well acquainted with its ordinary & proper functions. But the practice of Physick consists

#From this view of the knowledge & qualifications that are necessary to form a Physician we are struck with the propriety of ~~the observation of~~ Judge Blackstone's observation respecting the british Physicians to whom he pays this just and well deserved compliment

then
an acquaintance w. man

in an accurate knowledge of the diseases incident to the human
frame, and of the remedies with which health is to be restored.
The former comprehends the diagnosis morborum, the latter the
Materia Medica; and as many of our most efficacious remedies
are furnished by the mineral kingdom, and almost all require
some preparation before they are administered to the Patient
~~[illegible]~~ a knowledge of chemistry becomes useful to the practi-
tioner of Physick; not only to understand the pharmaceutical treat-
ment of medicinal substances, but to prevent injudicious compo-
sitions. # ~~The celebrated Judge Black Blackstone in his introduction~~
~~to the Laws of England pays the british Physicians this just &~~
~~fine compliment~~: That the profession of Physick abounds with
more gentlemen of liberal education and extensive knowledge than
~~any other could~~ can be met with in any other profession, and I ~~flatter~~
~~myself~~ trust that the Physicians of America will at least endeavour to
have the same observation applyed to them. — There is certainly no pro-
fession that affords greater ~~opportunities~~ occasions to acquire useful knowledge
& an acquaintance with mankind ~~the knowledge of the world~~, and these lead to liberality of
sentiment & propriety of conduct. The opportunity of acquiring this
knowledge ~~is now equal~~ in this City is equal to any place in any
Country. — It is the seat of Government, which naturally attracts & contains
the men of the first characters from every part of the Union. ~~By~~
uniting ~~the two seminaries of learning, which were before the separate~~

~~were respectable, the University as it is now established, will be able to ommand the first characters in be every species of literature & will of course arrive at greater eminence~~ The medical school is now on a Plan altogether similar to that of the celebrated Uni-versity of Edinburgh, and I trust that the Lectures ~~which will in future be~~ delivered here, will be more useful & of greater importance than any can be that are delivered in the foreign Schools of Phy-sick. For as diseases vary according to different situations, countrys & climates, and as the diseases of America in many instances differ essentially from those of the northern parts of Europe, it must surely be more useful & advantageous to study Medicine where we are to practise Physick than to study it in a foreign Country. I do not however by any means deny the usefulness & advantages of visiting the seats of Learning in Europe; for I am well convinced that the more ~~one~~ we multiply ~~vary~~ our opportunities of acquiring knowledge, the greater will be our progress & by hearing the opinions of different teachers we have a much better chance of coming at truth.—

Before I conclude it may be proper to explain what is proposed to be taught in a course of Lectures on the practice of Physick; for by the present arrangement ~~now made~~ the Theory is separated from the Practice & constitutes a distinct Professorship under the appellation of Institutes of Medicine, in conformity to what is stablished ~~adopted~~ in Edinburgh, Leyden and the most celebrated schools of

#It has been proposed to arrange diseases according to their proximate causes; an arrangement that would undoubtedly be very desireable, if it could be reduced to practice. But in the present limited state of knowledge this is altogether impracticable; because in ye 1st place we are in many diseases ~~are~~ still at a loss to discover the cause, tho the symptoms are sufficiently familiar. The Angina Pectoris for instance, a disease which has engaged the attention of the first Physicians in Europe, has hitherto baffled every attempt to investigate its cause, and almost its cure; an 2dly the same cause will often produce different symptoms & effects. For these reasons then an arrangement founded on the proximate causes of diseases is as yet impossible; and we must therefore class diseases according to their symptoms, and tho this method is also attended with its peculiar difficulties, for in the course of these Lectures we shall find that different & opposite causes will often produce similar effects, ~~hitherto~~ no rational method has been hitherto discovered to ~~answer the intention~~ obviate this inconvenience.

Physick in Europe. As every disease is ~~disting~~ characterized by its particular or what are generally called Pathognomic symptoms, by which it is to be distinguished from all other diseases, our first object must necessarily be to give a clear & true definition of the disease; then to deliver its history & with this to point out the predisposing, occasional & proximate causes; account for the various symptoms that take place, and from these judge of the probable event of the disease or ~~give~~ prognosis, and after laying down the indications of cure generally, explain the manner of treatment that is attended with the best success. the diseases of Women & children will be considered separately, on account of the peculiarities with which they are attended. — It will be my principal object to teach you in what manner to become most useful as practitioners; ~~but~~ without however entering into vague conjectures or uncertain opinions; but wherever opinions have been introduced to influence the practice of Physick, or theories established that have a tendency to influence the method of treating diseases, it shall be my study to guard you against their ~~dangerous ten~~ effects. — Various plans & systems have been proposed & published on the best methods of teaching the practice of Physick, all of them are attended with their defects as well as advantages. I propose following the order laid down by Dr Cullen in his Synopsis & Practice of Physick, but with ye liberty of occasionally deviating where I may happen to differ in Sentiments; and tho the term of Nosologia methodica is in familiar use among medical persons I am persuaded that all are not acquainted with ~~the~~ what it imports.

The term Nosologie signifies simply a description or rather relation of a disease; and it

It has been and continues to be the opinion of some men of ~~distin-~~
~~guished~~ of great eminence that every disease is distinguished by its pathog-
nomic or peculiar symptoms which are so characteristic of it as
to discriminate it from every other, in the same manner as the
various productions of nature, particularly in the vegetable &
animal kingdom, are by peculiar marks distinguished from all
others, in consequence of which they are reduced under their respective
~~order~~ classes, orders & genera. It was thought that diseases might be
arranged in the same manner, and that those which agreed in
their nature & treatment would of course be classed or associated
together, and thus greatly facilitate the study & knowledge of
diseases. Upwards of 200 years ago Felix Platerus made an
~~an~~ inconsiderable attempt towards a nosology methodica; but
Sauvages of Montpelier & the celebrated Linnaeus were among the
first who prosecuted this idea to any extent; Sauvages & Linnaeus
were not only cotemporaries, but on terms of the most intimate
friendship, and if my information does not deceive me, Linnaeus
first suggested the ~~idea~~ plan of a Nosologia methodica to
Sauvages and urged him in the strongest manner to make &
prosecute the attempt. Sauvages accordingly published a small
12mo volume on the subject, which he afterwards enlarged to
two vols. in 4to Linnaeus some years after published his genera
morborum which served him for a text for his Lectures on the diagnosis
morborum. In my attendance on those Lectures I had an opportunity

f hearing the system explained & the advantages of it pointed out;
Some years after Vogel & Sagar published their systems & Dr. Cullen
has since favoured ~~the~~ us with his. It would answer no pur-
pose to offer any remarks on systems which are known only
by name among us; but it will not be improper to offer some
onsiderations on Dr Cullens. The principal object, as I before
bserved, is to arrange diseases of a similar nature together
& to distinguish them by invariable & fixed symptoms. Unless
this is accomplished one principal design of a nosologia
ethodica is lost. And tho the classes & orders of diseases, in
he same manner as in subjects of natural history, may be ar-
ificial, it is absolutely necessary that the different genera should
e natural, and that every species should possess the characteristic
r pathognomic symptoms of its genus. But if we judge of
Dr Cullen's system by this standard it will be found defective.
One or two instances will at present be sufficient, reserving re-
marks on others when we treat of ye particular diseases. Under
the genus Cynanche he considers the inflamatory & ye putrid
sore throat as Species, tho in their nature, cause & cure no two
diseases can be more distinct; he might with equal propriety
have placed the inflamatory & putrid fever under the same genus;
for they differ no more from each other than the putrid & inflama-
tory sore throat, which have nothing in common, but that they
occupy the same part. Under the genus Apoplexy he places the
hydrocephalus, & the effects from poisons & cold as Species, tho total-

fferent in their symptoms & cure. But notwithstanding these de-
ects, which are indeed great & striking and may be urged as powerful
bjections against any nosologia methodica, his first lines of ye
ractice of Physick is a performance of superior merit & value on
ccount of the history of diseases which he has there delivered.
n this, in my opinion, consists its great excellence and it stands
ltogether unrivalled for accuracy, perspicuity, conciseness and
udgment. His history of many diseases is indeed so perfect and
ompleat that they scarcely admit of comment. It is this excellence
owever which recommends it in a particular manner to the
onstant attention of the Student in Medicine, for nothing ~
an be of greater importance to him than a perfect & intimate
nowledge of diseases; and tho the arrangement is in some in-
tances faulty, and his theories, in my opinion at least, not
lways well grounded, it must ever be considered as a
erformance of superior genius & merit, which I am persuaded
will maintain preeminence as long as Medicine shall be cul-
tivated as a Science —

d la
them
Scien
desen
ncu
lear
t o
there
ere.
mucl
ot
f a
they
var
ny
Powe
cloa
rt.
the
with
ning
ning
anel
are
usea

laudable curiosity leads persons in every profession to make hemselves acquainted with the rise, progress & state of that cience in which they intend to become proficients. No Science deserves it more than Medecine, in the history of which while we numerate the names of eminent Men, we at the same time learn the different stages of the Art and the various theories & opinions that have prevailed in different ages. What would herefore in other sciences be deemed a matter of mere curiosity, is re attended with evident Utility; for it has so happened, too uch indeed, that Physicians of eminence have generally given laws ot only to their cotemporaries, but to succeeding ages; & ye name f a Man has frequently stamped a value on opinions which hey by no means deserved. To make you acquainted with the arious theories that have hitherto prevailed in ~~Medicine~~ Physick, is y motive for devoting one Lecture to the history of Medicine.

ome useful arts are nearly coeval to the human race; for food loathing & habitation, even in their original simplicity require some rt. Many Arts are of such antiquity as to place the Inventors beyond he reach of tradition. Several have gradually crept into existence without an Inventor. The busy mind however, accustomed to a begin ning in things cannot rest untill it finds or imagine a begin ning to every Art. Thus Bacchus is said to have invented wine; nd Staphylus the mixing of water with wine. The bow & arrow are by tradition ascribed to Scythos, Son of Jupiter, tho it is a weapon used by all nations in every part of the globe. Even spinning so

account of its usefulneſs, must be honoured with some illustrious Inventor: by the egyptians it was ascribed to their goddeſs Isis; by the greeks to Minerva; by the peruvians to Mama Ella, & by the chinese to Yao. I mention these instances to shew you how similar the opinions of Men are in an uncultivated state, and how little faith can be put in the traditions of Antiquity. Medicine has in the same manner been attributed to a divine origin & with equal reason By others the honour has been given to particular persons, whom they on that account call the founders & Inventors of medicine; but the persons mentioned by historians perhaps never existed but in the imagination of their prejudiced admirers. It is by no means probable that one person should have such progreſs in Medicine as to deserve the name of an Inventor. It is by y. succeſsive labours of Persons in different ages that arts are produced & brought to perfection. And Medicine is in some measure coeval with Man. Mankind must originally have been subject to various diseases & liable to Pain & sickneſs occasioned by the inclemencies of the air, exceſs of diet & many other causes: they must at all times have been liable to external injuries requiring manual aid. Cures would be attempted by various methods; many things would be tried at random, in many diseases there is a natural instinct for things calculated to give relief, and Nature would furnish relief in others. Attentive persons would observe it and apply the same remedies in similar cases, which would naturally lay the foundation of Medicine. It was customary with the Babylonians & some other nations of antiquity to expose their sick on the highways for the inspection of paſsengers with a request to examine their disease and advise them to some

methods of cure; It was the duty of those who recovered to hang up tablets in the temples of Esculapius, specifying the disease with which they had been afflicted and the method by which their health had been restored. Long life & a large family would render a man capable of improving his knowledge in physick; fame, humanity & grateful returns would encourage him to make accurate observations in order to be more beneficial to his neighbours; the same motives would excite him to transmit his knowledge to his posterity; and we accordingly find this to have been the case, and that by this means Medicine was confined, in ~~to~~ particular families not only for years, but for ages. Physick however made but inconsiderable progress, untill it was cultivated as a Science & became the care & object of particular persons. The most ancient accounts of Physick relate to its State in Egypt, but these are obscure & defective. Hermes Trismegistus is considered the Father of Medicine & Philosophy in Egypt; he prescribed laws for the practice of Physick which continued in force for a length of time; by these no person was to prescribe for different diseases; but confine all his attention to one; on pain of suffering death in case ~~he went out~~ the patient died of a disease yt. was without his department. Regulations of this kind may answer a good purpose in manual operations where great dexterity is required, but are altogether inapplicable for internal diseases.— In Greece the priests of Esculapius were principally intrusted wt. ye. care of the sick, who were usually brought to the Temples to consult ye. deity & had the cures revealed to them in a dream, & we may thence conclude that a great deal of priestcraft was combined with its

#Hippocrates may with justice be called the Father of Physick, and his observations have stood the test of ages. He has not however escaped malicious reflections for he has been unjustly accused of having borrowed all his knowledge from the records of Physick preserved in the Temples, and of having destroyed them after they had served his purposes—

Some of the Priests however soon became clinical practitioners & were particularly attentive to the prognosis in diseases. All ye. ~~wrt~~ writings or records of Physick were kept in the temples, which were at the same time Schools of Physick, of which Rhodes, Cnidus, Cous, Crotona and some others acquired considerable reputation. Such was the state of Medicine untill the time of Hippocrates who is generally considered as the Father of Physick. He was a descendant of Æsculapius who had flourished 700 years before him; born at Cos about 458 years before the birth of Christ; he did honor & credit to his profession by living to the great age of 104 years and died one year before the birth of Alexander, 200 years after sciences had began to flourish in greece and when Socrates & his disciples had brought the sciences to the highest perfection in that country. Hippocrates was educated in one of the temples of Æsculapius, but soon became a student of Philosophy and clinical practitioner. His fame extended over every part of Greece, & tho considerable offers were made him to leave Thessaly, his native Country, he considered his duty to devote his services to the country wh had given him birth. Several of the treatises attributed to Hippocrates are no doubt spurious ~~&~~ as they bear no resemblance to those performances of his which are known to be genuine. His Aphorisms, observations & Treatise on diet are ye most perfect of his works. His prognostics are a finished piece.– # The system of Hippocrates continued in vogue untill Philenius of Cos & Serapion of ~~the~~ Alexandria founded ye. empiric Sect. These rejected all theory and confined themselves to observation, history & analogy of diseases.– From Greece the Sciences were transferred to Rome. This city owed its origin to ye. meanest & most despicable men, who subsisted by plunder & rapine, and were engaged in continual wars for several

#His disciple Themison improved on his doctrines, & Thessalus perfected the system. It is singular in tracing the revolutions of physic to observe how the same principles and conduct occur at different & distant periods. The arrogance & vanity so conspicuous in Thessalus have not been buried with him. He professed to teach every thing necessary to be known in Medicine in six months and affected to despise all who differed from him in opinion. All diseases were by 4 him said to arise either from stricture, or from relaxation, and sometimes from a mixture of these causes. Had he used the terms sthenic & asthenic, a modern system of physick founded on principles similar to those of Themison would have differed from it as little in name as in reality; making proper allowances for the improved state of knowledge at this period.

enturies neglecting every consideration but ye of conquest. We are cordingly told by Pliny that Physick was not practised in Rome for upwards of 500 years after the foundation of that city; we even find ye ato the censor prescribed incantation for a fractured bone. The Aesculapian superstition had however some time before this been introduced by ye Priests who had temples near the Tiber, as appears from some Medals yet extant. Artagarchas a greek came to Rome about 533 years after its foundation, he was a great Surgeon and was at first favourably received, but was soon after banished with all the greek physicians. sclepiades is the first greek physician of whom any mention is afterwards made. He came to Rome to make his fortune He professed to cure cito, tuto, & jucunde; he therefore took care not to distress his patients with regimen or medecine, but allowed them the full gratification of their appetites. He ~~was~~ laid the found~~er~~tion of the methodic Sect, an acct. of which is given by Prosper alpinus. This Sect however with many others was swallowed up by Galen, who continued for a long time the Tyrant of Medecine. Galen was undoubtedly a Person of Merit, his great fame was however in a degree at least owing to a variety of circumstances; his Father Nico was a Man of wealth & Literature, and gave his Son a most liberal education. After Galen had finished the study of Philosophy he commenced that of Physick, which he prosecuted under different Masters, which afforded him ye opportunity of hearing different opinions; he completed his education by travelling; and after being thus possessed of all the learning requisite to form the gentleman & physician, he repaired to Rome, at that time ye capital of the world. Fortune however did not favour his designs,

and after remaining there 4 or 5 years he returned to his native Country. He was afterwards recalled by Antoninus & Lucius Verus, & soon acquired the favour of the Emperor & the good graces of the Empress Faustina. He embraced the dogmata of Hippocrates, which he established by his reputation, high rank & great authority, and by the number & quality of his writings; for he wrote no less than 500 volumes & gave them such a connection as to form a compleat system of medicine. It is not however surprizing that Galen should be so universally received & his doctrines so generally established. Systems are always prejudicial to Science; for the indolent find in them a common place book, to which they may have recourse without much study, and they are a check on the endeavours of modest genius. Barbarism then prevailed over the whole world, and Galen's system remained undisturbed for many centuries. When the roman empire in the west was overrun & entirely ruined by the Goths, the arts & Sciences or rather their remains went to the East where they remained for a time. But in the 7th century of the christian Era Mahomet overran great part of the east, took & destroyed Alexandrie and as the Mahometans equalled the goths in their hatred for Literature they destroyed the famous Library at Alexandrie which contained all the Literature of those days. A considerable time afterwards the Caliphs of the race of Abassidi regarded the sciences with some favour, recovered many of ye greek manuscripts & ordered them to be translated into the arabian & syrian languages. They first fell on the works of Aristotle & afterwards on those of Galen, whose system of medicine was built on ye aristotelian philosophy. The arabians however contributed but little to the improvement of medicine, if we except the description of a few new diseases,

becult
the
by the
entitle
the
arab.
of the
some
purp
for c
mak
grea
whe
bro
Spai
The
lan
the
ma
wa
tes
£
the
sh
to
va

peculiar to Arabia, with the remedies adapted for ye cure of them.
The small pox is one of the diseases ~~which~~ was first described
by the arabian physician Rhazes, nor was it known in Europe
untill Crusades were instituted for the recovery of Jerusalem, when
the small pox & several other diseases were brought into Europe. The
arabians neglected Anatomy entirely, as they with all the nations
of the east, have an aversion to touch dead bodies. They had indeed
some knowledge of chemistry, but they did not apply it any farther to ye
purposes of medecine than to furnish the Materia Medica with Syrups,
for untill that time honey had always been employed, as the art of
making sugar is an arabian invention and was unknown to the
greeks & romans. They however made some improvements in Surgery,
which must happen in all manual arts or operations. The arabians
brought learning back again into Europe & established Schools in
Spain, from whence Literature was diffused over the rest of Europe.
The college of Salernum was then founded & Professors appointed in ye
languages & sciences. They published the scola salernitana, from which &
the works of Constantine a Professor of Medecine at that place we
may judge of the state of learning in that barbarous age. Medecine
was altogether taught on the galenical system: they knew little of Hippocra-
tes or even of the original writings of Galen, but commented on the
translations given them by Rhazes & Avicenna. It was not before
the beginning of the 15th century that sciences began again to
shine forth in their native lustre. At this time a taste began
to prevail in Italy for the liberal arts, which however was not
very considerable, nor did it spread universally untill the year
1453 when constantinople was taken by ye Turks, which forced

He
with
was
and
invo
ack
made
a a
on
of
in
who
mad
I th
celo
sect
syo
for
hel
any
an
ma
an
bu
exp
ro
th

the men of learning to fly for security to the west, & these brought with them all ye literature of the ancients. In 1460 the art of printing was discovered, by which the labours of the ancients soon became publick, and Men recovered out of the Lethargy in which they had been involved for near 15 Centuries. The superiority of the ancients was acknowledged & they were universally studied. The arts & sciences made considerable progress, but medecine did not advance in a degree equal to the politer arts, as it is a Science founded on observation & experience, is & can not ~~to~~ be perfected within the age of Man. Chemistry untill this time had been little employed in physick; it was entirely in the hands of quacks & Alchemists who made some improvements in it. The lues venerea had just made its first appearance in Europe which yielded only to Mercury, & the virtues of antimony had not been long discovered when Paracelsus made his appearance. He was the author of the chemical sect, that exploded the doctrines of Galen & introduced a very diff. system of physick, equally if not more pernicious than any of the former. This Sect continued nearly 100 years & ye professors of it were held in high estimation by many of the princes of Europe. They despised anatomy and all theorys drawn from physiology, rejected bleeding and recomended the hot regimen in fevers. One of the greatest men of this sect was Iohannis Baptista Van Helmont. He was an excellent chemist, but a wronheaded enthusiast. A good scholar, but ignorant of Anatomy & physiology, and tho he has the merit of exploding Galen's doctrines, he unfortunately substituted worse in their room. He fell a sacrifice to his own theory and died of a pleurisy in the 56th year of his age, because he would not be bled. Physick made but small progress at this time in comparison of what might have been

rep
Ba
ret
wo
do
con
ry
of
wa
tie
for
gen
pu
in
ll
to
to
re
Ty
m
th
p
~~L~~
w
on
o
o
f

expected from the great improvements that were made in Anatomy Botany & chemistry. The ancient theories of temperaments were still retained. The scholastic philosophy maintained its ground, notwithstanding the great Bacon lived at this time, who laid down better rules for the study of medicine than any person had ever done before ~~him~~ them. But no Physician, except Sydenham, paid any regard to them before Baglivi's time. The discovery of ye circulation of the blood produced no great change in ye state of Physick. It was some time before it was universally admitted, & when admitted was not rightly understood, nor did they know how to make a proper use of it. The Helmontian doctrine began to prevail very generally, especially after Franciscus de la Boe Sylvius taught it publickly. He was a celebrated Professor at Leyden, a man of great ingenuity & an excellent anatomist & Chemist. He deduced the cause of all fevers from an acid, and advised the cure to be effected by Alkalis. No theory that ever existed was productive of so much mischief to mankind & it has with justice been said that those who recovered by this treatment had gone through the fiery trial. In Sylvius we have an instance of the insufficiency & fallacy of human reasoning; he was one of the first genius's that ever lived; this was improved by a most extensive & liberal education; but these great endowments only served to make him more dangerous & destructive to mankind, by enabling him to enforce his doctrines with greater energy on his readers & hearers. How cautious then ought we not to be in admitting opinions that are not founded on observation, and especially when they lead to important rules of practice; we ought never indeed to admit the authority of any person, however distinguished, in matters of opinion. This theory

& the destructive practice founded upon it prevailed universally untill Providence, in compassion to man, sent the immortal Sydenham into the world. He was as much inferior to Sylvius in education & genius, as he was superior to him in judgment, to which may be added a peculiar talent for observation. Sydenham is in justice to be considered one of the first physicians that ever existed. He had no great knowledge of books, tho he highly valued the writings of Hippocrates, but without being a servile follower; & he was a perfect model of integrity & candour. He was the first who introduced the simple mode of practice & gave opiates freely but judiciously. He was more esteemed by foreigners than by his countrymen who considered him in y^e light of a quack. Before his time, physicians allotted particular symptoms to a disease & established a uniform method of cure; but he first in his treatise on epidemics observed that y^e same disease will often require very different treatment, & that those med^s which were found useful in one season proved ineffectual in another. — The mechanical Physicians had their origin about this time; they considered the body merely as a machine & attempted to explain every phenomenon on mathematical principles. Different causes were now assigned for diseases, and every occurrence was to be referred to y^e strictum & laxum, or in modern words to sthenic & asthenic. Their opinions however were too extravagant to continue long, & were superseded by Hoffman, Stahl & Boerhave. — Frederich Hoffman was Author of various medical performances during 50 years. He admired the

mechanical system & was a good chemist, but he likewise attended to the nervous power or sentient principle. He was not only a man of great medical erudition, but particularly excelled in making observations in physick. He used few & those generally weak medicines; of a credulous disposition & too much delighted in Nostrums or specificks, & some of which he attributed surprizing but illfounded virtues.

Stahl was first introduced into notice by Hoffman, but soon became the rival & antagonist of his Patron. He introduced a doctrine which had been obscurely pointed at by some of the Antients, but particularly by Plato, Dolæus & Wepfer. He was a Man of an acute genius, & long & accurate observation. He ascribed the greatest part of diseases to plethora & attributed all crises & efforts of nature as they are usually called, to a rational soul; and therefore advises a particular attention to them that they may not be interrupted. In consequence of this theory their practice was feeble & trifling, tho they excel in delivering ye history of diseases; and deserve particularly to be consulted on the diseases that originate from obstruction of the Menses or other hemorrhages. Stahl was one of the first to pay attention to the nervous system, as it is so immediately connected with his theory of the Stahl. He had numerous followers in germany; but Dr. Nicholls of London, & Dr Porterfield of Edinburgh are ye only british physicians who adopted his doctrines — Boerhave was the cotemporary of the two former Authors. Every branch of Medicine is greatly indebted to him. He was a man of incredible application, solid judgment & extensive erudition. He was not only intimately acquainted with, but taught all the sciences that are more immediately connected with ye Study of medicine, and to this he added a thorough knowledge of the languages & of polite literature. He excelled in eloquence & thus greatly

recommended his doctrines to his Pupils. He was attached to no Sect, but took from each what appeared to him founded in truth. He adopted ye doctrine of obstruction & Lentor of Bellini; of Acid & Alkali of the chemists, & ye of Plethora from Galen. But notwithstanding his great & eminent merit, he affords us a striking instance of ye weakness of the human understanding & that perfection is not ye lot of Man for tho he considered the human frame very accurately as to its mechanism & composition of parts, yet he never took notice of the nervous power or sentient principle, which is of the first importance. Some of his Pupils however have sufficiently compensated for this omission, and Haller in particular has been indefatigable in investigating the laws of the nervous System. Our system of Medicine then appears to be complete as it comprehends all the constituent parts of the human body, which none of the former systems did; but notwithstanding the system is complete it is still far from being perfect and ~~Physick~~ Medicine is even yet in a low state tho Anatomy, Chemistry & ~~the~~ other branches of it appear nearly to have arrived at their utmost degree of perfection. Anatomy tho more immediately connected wt Medicine than any of the others, as it is the foundation of Physiology & Pathology, does not teach us how to remove or cure internal diseases. But this is only to be learned from a knowledge of diseases & of the remedies adapted for the cure of them; both depend altogether on experience, and this alone is the basis of the practice of Physick. For ~~whatever~~ whoever attempts to cure diseases on any other principle will infallibly be led into error — We find too that observations made

centuries ago continue to be useful at this day, while opinions scarcely continue to live beyond the moment in which they are formed; tho they are often attended with the most mischeivous effects, while they do continue, especially if they are ushered into the world under the authority of some great or celebrated name.—

From this slight sketch of the history of Medicine we are taught some very important lessons. We are in the first place led to conclude that systems of Medicine have been attended with infinite prejudice to ye. science by preventing that liberal spirit of enquiry which is so highly necessary to ye improvement of every art. This is well illustrated by the present state of Medicine in different parts of Europe. If we except great Britain we find that Medicine has scarcely made any progress in Europe within the last forty years. For if we consult the practical writers of ye different nations, we find their method of treating diseases is altogether similar in most instances to what it was forty years ago, & adapted to ye systems of Physick taught by Hoffman, Stahl & Boerhave. In great Britain where no Man ever rose to such eminence above his fellow practitioners as to impose his dictates for laws, Medicine has been greatly improved & is at this time arrived at a higher degree of perfection than in any other country, tho it is not many years since the english were excelled by their neighbours both in Physick & Surgery. It is extremely difficult for Men to renounce prejudices which they imbibed in the early period of life. Van Swieten & Haller are both striking instances of this truth:

both have commented on ye works of their Patron & teacher Boerhave, & both have been guilty of absurdities to reconcile the opinions of Boerhave with reason & later experience. We further learn that infinite mischief & indeed destruction has been produced by theories & speculations in Physick. The human race has at different times been the sport of opinions and thousands have been sacrificed to the reveries & fancies of Men of lively and warm imaginations. The ancients, unacquainted with the circulation of the blood & the nature of our fluids looked for ye causes of diseases in these; many of the moderns, almost ignorant of the Laws of the nervous system, disregard the consideration of the fluids altogether, as if they were no part of our body, and look for the causes of diseases in the sensorium commune, with wh. they are in a great measure unacquainted. — We moreover learn from the history of Medicine that it is a Science entirely founded in experience; that whenever any mode of practice has been introduced a priori or from reasoning alone, it has infallibly proved erroneous and pernicious. Theory then ought only to be admitted to account for or explain the various Symptoms & Phenomena that take place in diseases, & thus to lay the foundation for a rational method of cure; & this theory or reasoning is inseparable from a course of ~~the~~ Lectures on the practice of Physick, and it will therefore be my Study to render this part of the course as perfect as my opportunities & abilities will enable me to do; — & I

shall moreover consider it incumbent on me to expose & refute the theories or opinions of any Authors which have a tendency to countenance any Practice that my experience convinces me to be erroneous.—

Gentlemen
The Study of Natural History, which comprehends Zoology Botany & Mineralogy, is of the greatest Importance to Man, as every thing that is necessary to ye Support and comfort of Life is supplyed either by ye animal, vegetable or mineral Kingdom. Man is ye only Creature endowed with reason & Judgement ~~to convert ye productions~~ to make a proper use of the productions of Nature; it is therefore evident that ~~they~~ this advantage was the immediate end of their Creation. This Advantage however ~~must~~ will always be in proportion to ye progress he has made in this Science; for we cannot expect to reap benefits from Subjects with which we have no manner of acquaintance To point out ye Advantages that are likely to accrue to us from an intimate Knowledge of Botany, will be the Subject of this Lecture. This Science is both useful & agreeable, & ~~ought to be ours~~ pursuant to ye dictates of reason & ye Law of Nature, claims a particular attention. Tho it is confessedly greatly subservient to Medicine its usefulness does not terminate in this alone; it has however been too long considered as connected only with ye art

No Science is better calculated to lead us to a consideration of ye infinite Wisdom & power by which every thing in this World is preserved and propagated. The order that is observed in ye disposition of every thing created, never fails ~~of~~ to strike~~ing~~ ye beholder with amazement & to inspire him with the highest Veneration for the Author of those Laws by which all Nature is governed. It is ~~worthy our observation~~ very remarkable that scarce 20, of the 9000 different species of plants that are at present known to exist, are found to grow in ye same place. There is not a Vegetable but what has a particular Station assigned to it, in which ~~alone~~ only it can thrive & flourish, for Nature has assigned proper food & Nourishment to every Plant and Animal. If Vegetables ~~had~~ were not ~~been~~ thus confined, the different species could not possibly ~~have~~ been ~~kept up~~ preserved, for as some plants produce no less than 40000 seeds upon one Stem, while others do not bring above a Dozen to Maturity; the former would in Time ~~have~~ overrun and destroyed

~~have overrun & destroyed~~ the latter, if this regulation had not taken place. For this purpose also every plant nourishes one or more species of Insects, who by a natural Instinct deposit their Eggs, where there is ye greatest prospect of food for the young, ~~who~~ they by eating or otherwise destroying the superfluous, keep the Vegetables within proper bounds. But least these Insects should encrease too fast and entirely destroy the plant assigned for their nourishment, Nature has provided a different kind which do not subsist on Vegetables, but destroy the former Insects either by devouring or depositing their eggs on them. The Ingenuity of Man has not yet been to able to account for this curious Phenomenon ~~that some animals~~ which we observe in this Case; where one Insect by a peculiar power throws the other into a State of Torpor, then lays its egg in it to be hatched; ~~by~~ the torpid Animal ~~is yet~~ not becoming liable to putrescency, ~~but and~~

but remaining in this State untill consumed by ye Insects hatched within its body. Nature has also means ~~Bounds are also set~~ ~~at hand~~ ~~to once~~ in readiness to prevent a too great encrease of the latter; for the insectivorous Birds destroy them almost as soon as they come forth, and these ~~by~~ Birds terminate finally into our use, ~~ente~~ ~~for~~ ~~while~~ some serving for food, but most of them entertain us with their agreeable musick, ~~whilst a few are employed in our Kitchens~~. The wise Institutions of Nature are in no part of ye Creation more conspicuous than in ye Precautions she took, that the Beasts & Birds of Prey should be kept within due bounds. It is therefore orderd that they encrease but slowly in respect to ye other Animals; that they love do not attack ye living Animals unless they are urged by Hunger & ~~or~~ ~~& without~~ they cannot find Carcases to subsist on, and ye Birds of Prey are moreover incapable of seizing any but such Birds whose disposition of feathers, by wh. their ~~flig~~ course or manner of flying is ~~determined~~ regulated, is conformable to their own

We cannot sufficiently admire ye various & curious methods Nature ~~has~~ employs to scatter or disseminate ye Seeds of Plants. We find many of them furnished with membranes, others with a kind of Plumage, by which they are readily taken up and carried by ye Winds to remote places. Some Seed Vessels are elastic & burst with great force, throwing out ye Seed to a considerable distance, ~~espe~~ and particularly in rainy Weather, when the Earth is fittest to receive it. The Seeds of plants growing in Water are carried by ye Stream to remote Countrys & Climates, without losing ~~ye~~ their vegetating power. This will perhaps furnish us wth ye reason why ye aquatic plants are nearly ye same in all ye different parts of ye Globe. A great Number of Vegetables produce Berries for ye nourishment of Birds & other animals, but ye Seeds passing undigested through ye Stomach & Intestines & and are thus disseminated

There is another method still more curious than any of the former, that is peculiar to a certain order of Plants: and these have their Seeds furnished with small hooks to which they fasten on Animals and are carried many Miles before they fall off. We have an Instance of this in ye plant called ye Spanish Needle.—

~~A few~~ Some plants have the exclusive privilege of keeping sole possession of ye place they ~~have~~ occupied, by means of a repellent power wh. prevents many of ye other herbaceous plants from growing near them. Trees and Shrubs not only give grandeur to ye Creation, but afford food and Shelter for Animals and give protection & shade to many herbaceous plants, which could not exist if they were deprived of this Advantage.—

That part of Natural history which treats of Insects is generally looked upon as too trifling a Subject to engage our attention; whereas a proper examination of this part of ye animal Creation might be productive of ye greatest good to us.—

They are properly yᵉ Ministers of Nature that are employ-ed on all occasions. I have before observed how necessary they are to keep up a proper ballance in yᵉ vegetable Kingdom, and then serve to nourish those birds that amuse & serve us. Nature employs them for a different purpose where yᵉ larger animals cannot be employed. We find that Lakes and particularly stagnant Waters are inhabited by swarms of Insects, that ~~eat up~~ & clear yᵉ Water of yᵉ putrescent parts suspended in it. This ~~aquatic fowls~~ draws yᵉ aquatic fowls in ~~great~~ incredible numbers to those places, who live entirely on these Insects. And those that are not thus destroyed, undergo a change in wᶜʰ they are furnished with Wings to fly about, & generate and to die. Their ~~whole pro~~ Life only continuing for 6 hours after they leave yᵉ Water. But they chiefly attract our Notice on account of the ~~harm~~ damage they sometimes do to our Grain, but ~~in po~~ especially to our fruit trees. If we once ~~know~~ come at yᵉ knowledge of yᵉ Insects that do yᵉ damage we may expect to find ~~so~~ relief. ~~by some means or other~~ The surest method, & which I have known attended with Success, is to introduce those Insects ~~Insects~~ amongst them, that live on ~~Insects~~ these only, and they will in a short Time free us from their Disagreeable ~~Company~~ Visits. Insects that ~~trouble our~~ Infest our Houses are best expelled by some particular ~~Vegetables~~ plants, that seem to ~~entirely~~ possess no other Virtues but those of chasing these troublesome Vermin. Many Insects are also of infinite Service to us. The Bees provide us with honey, whose quality depends on ye flow~~to~~ers from which they suck it. This should lead us to consider ~~what~~ ye plants ~~ye~~ are most favourable for them, and then encourage ye growth of such as will yield Honey of a superior Quality. Another thing to be considered ~~it~~ in ye management of Bees, is to furnish them wth flowers early in ye Spring; and this can be very easily accomplished by planting ~~the~~ some vernal ~~Vege~~ Plants near their Hives. We find that ye Silkworm ~~first came from~~ naturally thrives best in those Countrys that abound with mulberry Trees, ~~but~~ and no part produces such a variety of different species of these Trees as N. America. ~~We have great reason then to believe y.e y.e Silk Worm may be found to~~ I ~~mentioned~~ before mentioned that every plant nourishes at least one certain species of Insects; it is therefore not improbable, but y.e Silk ~~Worm~~ may also be y.e natural produce of this Country. Some Insects are also of Service in Medicine. The Myrrh is collected in y.e Archipelago in y.e same Manner ~~in y.e Archipelago~~ as y.e Honey is by the Bees. The blistering fly is of great ~~Importance in Medicine~~ use to y.e Physician. It is not improbable but ~~we have~~ there are Insects in this Country that have y.e same effect; for this quality is not confined to that single species; ~~th~~ all y.e species of y.e genus ~~have y.e same~~ possess y.e ~~quality~~ Virtue of exciting Blisters if applyed to y.e Skin. The fly used for this purpose by y.e ancients and described by Dioscorides is a different species from y.e one ~~used~~ applyed by us, and continues to be made use ~~of for this purpose~~ of to this day in y.e East Indies and Egypt, where it is found in great ~~no~~ abundance ~~, to this day~~

We ~~thee~~ find then that nothing is created in vain & that even ỹ most trifling Productions are often of infinite Service in ỹ œconomy of Nature & ~~finally~~ in ỹ end terminate to ỹ advantage of Man —

The ~~very~~ greatest part of our food and cloathing is taken from ỹ Vegetable Kingdom; which differs according to ỹ different Climates. There is no part of ỹ World but what furnishes ~~enjoys~~ some food or other useful production not to be met with in any of ỹ ~~the~~ other. ~~Countrys~~ Asia produces ỹ ~~produces~~ ~~the~~ Date & Fig Tree, with ~~the~~ & most of the Spices. ~~Africa first furnished Sugar~~ In Africa ~~ỹ art of making Sugar [illegible] of ỹ Cane~~ the europeans first discovered ỹ ~~art~~ use of ỹ Sugar Cane & ỹ art of making Sugar. ~~Europe abounds in Corn, Wine & oyl.~~ South America furnishes ỹ ~~best~~ greatest number of excellent remedies for ỹ cure of diseases. ~~which~~ Europe abounds in Corn, Wine and oyl. ~~The Vegetable Kingdom furnishes food for ỹ Cattle indispensably necessary for ỹ support of Life~~ and all these are supplyed by ỹ vegetable

Kingdom. The Cattle ~~also~~ indispensably necessary to yᵉ Support of Life subsist entirely on Vegetables. Botany therefore must be of yᵉ Greatest Importance to Mankind. It is this that instructs us what plants yᵉ different species of our domestic Animals chuse before others. One species frequently rejects what another delights in; to yᵉ one a certain plant is wholsome food, and yet immediate poyson to another. The Water Hemlock is poyson to Cows, but has no bad Effects on Horses. The common Laurel is instantaneous poyson to Sheep who often perish by eating it in yᵉ Spring, before the ~~other~~ plants ~~been~~ proper for their nourishment, come forth. It would be of considerable Advantage to yᵉ Community ~~to render~~ if yᵉ ~~different~~ various plants injurious to yᵉ Cattle were described in such a manner, ~~as~~ that they might be known and avoided. Amongst yᵉ immense Variety of beautiful plants that ~~there~~ America produces, we may expect to find many that can be made use of for yᵉ ~~common~~ purposes of Life. It is very probable that we shall discover some yᵗ

may be of Service to ye. Manufacturer, and superse
the use of ~~some~~ those ~~of~~ that are imported in larg
quantities. I know ~~not any~~ nothing that requires our mo
immediate attention than ye. Investigation of
Plants that may ~~are~~ be of use in dying Cloth
~~&c~~ & other Substances. We cannot doubt but
~~we may find such~~ such may be discovered, as
the Indians know how to stain Wood & other
~~substances~~ utensils with beautiful & lasting Colours. The
readiest Way to come at ye. Knowledge of these
is to examine whether we have any plants
resembling those made use of for that purpose
in Europe. It is not many Years since a
Discovery was made by this method of Investiga
that has ~~had~~ been attended to happy Consequences ~~for~~ to great
Britain. The Roccella was for many
years bought ~~in ye. mediterr~~ at a great price
on ye. Coasts of ye. mediterranean and carried
to England for ye. purpose of dying red. It
was generally believed to be an animal Substance
untill it was properly examined by a Gentleman

in England, who ~~found~~ it to be a ~~Vegetable~~ kind of moss and ~~very~~ similar to one growing on all y^e. barren Mountains in Great Britain; which upon Tryal was found equal to y^e. Roccella and is now constantly employed for y^e. same purposes. by which not only a large sum of Money is annually saved to y^e. Kingdom, but y^e. Manufacturers ~~are a~~ ~~may~~ can ~~always~~ depend upon a constant and proper Supply. I have mentioned this Instance that some ingenious Gentleman might be excited to make Experiments on a Moss very much resembling the former, which is found in great quantity in these parts. —— It is not 30 Years since y^e. Kingdom of Sweden imported most of their materials for dying from France & Holland; but when Botany became y^e. ~~the~~ general Study of y^e. Country it appeared that Sweden either produced all these in such abundance or y^e. Soil was so well adapted to their Cultivation, that instead of importing they now export ~~large quantities~~ the superfluous in large quantities.

The Advantages ~~fro~~ arising from y^e. Discovery of useful

Plants growing ~~with~~ here, will be much greater than we can expect from introducing & cultivating foreign Vegetables. For these will sometimes change if they are conveyed to a different Climate and often lose the Qualities that render them valuable; ~~if they are conveyed to a different Climate~~ ~~of their~~ We have as manifest Instance of this in the Vine. Europe furnishes but one Species of Vine; but every province, nay different Parishes, ~~will~~ afford Wine of different qualitys. This is entirely to be attributed to yᵉ difference of Soil & degrees of Heat, ~~the Vine is exp~~ to which yᵉ Vine is exposed. ~~It has been repeatedly tried to~~ The Champaign ~~Grape~~ Vine has been repeatedly carried to Burgundy & planted there, ~~with~~ in yᵉ expectation yᵗ the Wine would ~~be of~~ have yᵉ same quality as Champain; but it always turned out Burgundy Wine. The same would ~~undoubtedly~~ happen if the european Vine were universally planted in this Country; it would ~~certainly~~ undoubtedly in a short time produce Grapes little different from our own, if equal Care & Culture were bestowed on both Species. ~~The~~ ~~If~~ Our Vines ~~was~~ were ~~undoubtedly~~ certainly created for

the same purposes as y.e european; and why should we neglect
to make a proper use of them, when Nature has furni-
shed us with more Species of y.e Vine than any
other part of y.e World. It has been observed
that the ~~plants~~ Vegetables of ~~this Country~~ America have a great
affinity with those that grow in Asia, and y.e
some are y.e in common to both Countrys. It
would be no difficult matter to make Experiments
~~or to judge from affinity whether we have not~~
~~some~~ by which we could judge whether some
of our plants could not supply y.e place of ~~some~~ those
that are imported at a great expence. We know
that this Climate differs very little from y.e nor-
thern parts of Asia in regard to y.e degrees of
heat & cold; and y.e asiatic plants are said to
bear our Winters extremely well

This Science is immediately & inseparably connected
with y.e Study of Medecine. The celebrated Haller
says of it that in Importance it is inferior
to none, and in Beauty excels any of the
other Branches of Physick. ~~We must entirely be~~
~~of this opinion~~ His opinion will be found very

just if ~~it~~ we consider that ~~very few Vege~~ three fou at least of our Materia medica are taken from ye Vegetable Kingdom. By ~~It must then be immediately necessary to a Person~~ How then ~~we can~~ is it possible ~~for~~ to distinguish ye genuine from ye spurious ye good from ye bad, and ye useful from the inert medical plants, unless we have a competent Knowledge of Botany which is ye Basis of a sound Materia medica. Many of ye Writings of ye Ancients are useless to us, and especially all those that treat of ye Materia medica, because their descriptions of ye Remedies ~~are so imperf they are so~~ they employed are so deficient & incorrect, that it is impossible to understand or know what plants they ~~meant~~ ordered or applyed ~~for ye~~ in ye Cure of Diseases. The Commentators ~~of~~ on ye ~~ancients~~ them have nevertheless wrote numerous Volumes on ye Virtues of ye ~~plants~~ Remedies employed by ye ~~them~~ Ancients ~~Ancients~~, and ~~attributed~~ frequently attributed ye Knowledge of plants to them ~~Ancients~~, they never could be acquainted with. ~~The~~ Thus it has been frequently asserted and almost universally believed that ye Hemlock so greatly comended by Storck is of y^e same Species that deprived Socrates of his Life, whereas the latter is a plant of a different Genus, and of a more virulent Nature. By Botany we also learn at what time Simples should be collected and what uses we have reason to expect from them in Medecine. The roots of annual plants are ~~void~~ destitute of any medical Virtues, ~~wher~~ & whenever these are commended, we may be certain there is a fallacy in y^e Case. The roots of biennial plants in General do not possess any eminent Virtues, but as many have enterd the Shops, it is necessary the practitioner should know the proper time of gathering them, for unless they are collected in the first year of their growth they will possess no Virtues at all. Many of these likewise ~~lose their vir~~ become inert if on drying or if kept ~~too long~~ any considerable time. The roots of perennial plants are best for y^e purposes of Medecine if ~~gath~~ they are gathered in y^e Winter or early in y^e Spring. ~~There is also a time~~ It is also observed of Herbs that they possess ~~st~~ Virtues in different degrees according to ye different time of collecting them. Some require ~~that we should gather them~~ to be gathered before ye expansion of ye flowers; others during ye time of flowering; and many are best suited for Medicine if gathered about ye time ye Seeds are ripening. ~~We Affinity also ye often lets us into leads us to discover ye medical use affinity of plants Vegetables, if we for plants of ye same order & Genus agree in Virtue. This rule has very very few objections exceptions, but and may~~ be ~~reckoned amongst one of ye Laws of Nature that~~. ~~These~~ We have another method of coming at ye knowledge of ye Virtues of a plant, and that is by knowing ye affinity it bears to other ~~plants~~ whose Virtues are already ascertained; for plants of the same order & Genus agree in Virtue. I shall ~~select~~ give but a few Instances out of ye innumerable ~~plants~~ Vegetables, that show this beyond a doubt. The umbelliferous plants are heating & carminative if they grow in high & dry places; but become poysonous if they grow near or in Water.

The Class of plants generally called ye antiscorbutic, agree in ye Order, Genus & Virtue; tho many are different in appearances. This may therefore be looked upon as a Rule that is liable to few Exceptions. The Senega root ~~is little different from~~ differs very little from ye Polygala that grows in Europe, and the latter is found to answer ye same end & purposes as ye former; but had never been used untill ye Senega was introduced into practice here. We have ye greatest reason to believe that Nature has furnished every Country with remedies for ye Diseases peculiar to it. We are certain that this actually takes place in many Cases; but it appears in none more evident than in those remedies that serve as antidotes to ye poyson of Animals. In India where ye Naja is ye most venomous Serpent, Nature has not only furnished ye Radix ophiorrhiza, but also an Animal known to Natural historians by the Name of Ichneumon, which justly deserves to be called the inveterate Enemy of ye. Naya, as it lets slip no oppertunity to engage & destroy ye. Serpent; for which purpose every Inhabitant keeps one or more of these Animals in his house & near his person. ~~The~~ ~~Upon being wounded~~ The Ichneumon upon being wounded ~~by the Serpent~~ finds a sure remedy against the Venom of ye. Serpent in ye. radix ophiorrhiza, which ~~Nature has provided for it it knows to find in those places that Nature has furnished it~~ Nature has provided for it. This root is used for ye. same purpose by ye. Natives, who ~~can not~~ are sure to suffer immediate Death, unless they can ~~t~~ get ye. root applyed in proper time. I cannot here help mentioning an Instance of ye. use of knowing ye. affinity one plant bears to another. Dr. Garden sent a Specimen of a plant growing in S. Carolina to Dr. Linnæus, who upon examination found it to be of the same Genus wt. ye. abovementioned Ophiorrhiza, and thence concluded it must possess similar

Virtues. He informed Dr. Garden of his Conjectures, who upon Enquiry found that this plant was as specifick in curing ye bite of ye rattle Snake, as the other against ye Venom of ye Naya. The Seneiga root is ye antidote made use of in this & ye neighbouring provinces to cure ye bite of ye rattle Snake, and is therefore ~~for~~ another Instance of ye provision of Nature. The venereal Disease was never known in Europe before America was discovered, and it is ~~an~~ prevailing Opinion that ~~prevails~~ ~~Americ~~ + America is ye original Seat of this Disease, and that the Indians here know a method to cure it speedily & effectually. The Lobelia & Ceanothus it is said are ye remedies ~~made~~ which they use in this Disorder. It will do honour to ye person who shall ascertain the Truth of this matter, and rank him amongst those that have improved the~~ir~~ art of healing. Intermittent & remittent fevers are no where perhaps more ~~endemious~~ general than in this Country; ~~and~~ several Remedies ~~have~~ ~~been commended in these Disease~~ that ~~grow~~ are very common here have been commended in these

Diseases. They deserve at least that proper Tryals should be made with them, that we could know whether they ~~d~~ merit the praises that have been bestowed on them. Perhaps we should then have remedies provided against these Disorders by Nature, and therefore infallible, or at least exceeding any other; remedies that we might collect ourselves, and not be exposed to the unavoidable Impositions, that we are frequently ~~liable~~ subject to. How often are ye efforts of ye most experienced Physician baffled by a Disorder which otherwise is neither difficult nor tedious to cure, when the remedies may ~~often~~ frequently ~~with too much Justice~~ be accused with too much Justice, ~~and are~~ whom become inert by Age or adulteration. How much more eligible would it be to have a Materia medica, the produce of this Country, than to import Medecines that ~~may~~ are probably ~~be~~ inferior to ~~those that~~ kind Nature has provided. From ye little ~~knowledge~~ and only superficial Knowledge we have of our medical plants, we may flatter ourselves that our Enquirys cannot fail of of being attended with Success. For it is beyond all Doubt that y^e Indians in y^e different parts of America are very expert in curing the Diseases with which they have been frequently attacked; but their remedies are either not calculated for y^e Diseases ~~come in of la~~ imported in these later years, or they have not yet had sufficient experience to ~~conquer~~ understand y^e nature of these, and ~~generally fail~~ on that account scarce ever attempt to cure them. ~~What a grand object is this for y^e Welfare It is con~~ Why should we then longer delay to +++ do this ~~ba~~ eminent Service for y^e good of Mankind. - No place on y^e Continent is better situated ~~for enter~~ ~~carrying~~ ~~taking an affair of this Importance~~ than Philad^a for carrying on an affair of this Importance. ~~And~~ y^e Societies instituted for ~~all~~ y^e advancement of all kind of Knowledge, the number of eminent & experienced Physicians ~~that grace this City,~~ who take a pleasure in promoting every thing that is good & useful, and the Institution of this Medical College, which even now exceeds our warmest Expectations, give us reason to hope that this important Subject cannot be neglected. From ye short View of ye subject it is evident ye Botany claims our particular attention ~~Botany then recommends itself to our Consideration in a particular manner~~. There is no Science in which the useful is more combined with ye beautiful. The Philosopher will find an inexhaustible Source of pleasure & Knowledge by enquiring into ye reason and end, for which the different species of plants and animals were created, ~~and~~

A Person who labours for ye good of his Country cannot do it more eminent Services than by discovering & encouraging ye growth & cultivation of such plants as may best supply our wants & ye place of those imported from abroad.

The Physician has other ~~Motives~~ and equally important motives. His own Credit and ye relief of the distressed prompt him to ye discovery of such remedies, as may be adapted to the Diseases of the Country. It is ye duty of every Physician to improve ye healing art to ye utmost of his power, and it is a duty that carries its own Reward. A Person who could discover a Remedy of as general use as ye Peruvian Bark, would do more good to Mankind than ye founder of Hospitals, and posterity must ~~honour & revere his~~ reflect on his memory for ~~this important Service~~ w. ye highest esteem & gratitude.

This Science is also of singular Service to Gentlemen who go abroad for Improvement with the Intention of becoming useful Members of Society. They will be more capable of making pertinent Observations if they have made themselves intimately acquainted with ye productions of their native Soil, and know ye natural Advantages & Disadvantages of ~~their Country~~ it. They will then be capable of judging what plants deserve their notice, and whether their Country can reap any benefits from ye Cultivation of them. They will be capable of communicating ~~ingenu~~ curious obervations to ye ingenious & learned ~~with whom they~~ there, from which they will be admitted to a closer Intimacy and attract the Notice of Men whose Acquaintance will be both honourable & advantageous. They will then return with ye Esteem of Gentlemen of Learning abroad, the Love & good Wishes of their Countrymen at home, and ye agreeable prospect of becoming instrumental in rendering their Country flourishing & happy

Plan of the Course

There have been upwards of 20 ~~diffe~~ Systems of Botany in ~~at~~ Vogue at different Times & in different Countrys. ~~The System of~~ Tournefort ecclipsed all those that had given us any System before him, and his may be still ~~looked~~ upon as an excellent performance; but in my opinion inferior to Linnaeus on several Accounts. For since Linnaeus began to write he has given us ~~such~~ explanations of ye Terms & fixed those that were taken in a vague Sence by others that wrote before him, ~~that he has now~~ so as to render Botany ~~either~~ easy & suited to ye weakest Capacity — The Memory is not loaded with superfluous & long descriptions; ~~but~~ for he has introduced ~~a meth a~~ Names wh. he calls trivial, & these are never given to more but one Species, whereas other Writers before him, often gave ye

ye. same Name to ~~different~~ 20 different plants
and then referred to ye descriptions of them by which the
memory was unnecessarily loaded. The Number
of Classes, the Subdivision of those Classes
into orders, these into Genera, and ye Genera
into Species render his System easier & preferable
to any of the others; as by these means
the plant to be looked for ~~is perhaps~~ is to be
found amongst 10 or 20 at most, whereas in
all ye other Systems, who ~~had~~ have not these
Subdivisions, ~~you mu~~ we must often run
over 100 different species before we find ye
~~plant is~~ character of ye plant we are
examining. —— The first part of
the Course will then be taken up in
~~getting~~ ~~introducting~~ laying down the Principles
off the System, and in giving those terms of
~~that~~ ye Science that are indispensably necessary
for to ye understand~~ing~~ & comprehend~~ing~~ it. ~~the System~~

~~Aft~~ After having given ~~a few~~ this Explanation I shall proceed to ye examination of ye plants and ~~then~~ ~~[illegible]strate~~ ~~may~~ be more particular in ye demonstration of ye ~~fa~~ different parts of ye plant ~~; and~~ Their proper method of describing a plant will ~~take~~ next take up our Attention and considerable part of ye Course; for ~~the~~ ~~ye~~ the chief end of ye Science is to examin~~ing~~ ~~of plants~~ & describ~~ing~~ ~~of~~ plants in such a manner that every person ~~may~~ ~~know~~ acquainted with Botany may know the plant we are describing ~~; but~~ At ye conclusion of ye Course I shall give some general Rules how we are to judge of ye Virtues of plants by ye affinity they bear to others already known. — And During the Course I shall never omit to mention any thing that may be either useful or curious, but particularly point out the plants that have been commended ~~either~~ for any singular Virtues ——

~~Our next Meeting will be on Friday Evening at~~
~~6 O'Clock in ye Evening, when the Days of~~
~~Attendance will be fixed for ye whole Course,~~
~~as as they shall be most convenient and~~
~~as shall be most con found most convenient,~~
~~to ye Gentlemen that attend the Course~~

I ~~request~~ should be glad if the Gentlemen, who purpose to attend these Lectures, would ~~will~~ give in ye names to Morrow between 10 & 12 O'Clock, yt I may know what hour of ye day will be most convenient for us to meet, & have time enough to inform them of it before our next meeting on Monday —

Gentlemen,

Ever since Medicine has been cultivated as a Science, Physicians have been divided in their opinion respecting the most eligible method ~~that can~~ to be pursued in order to acquire the knowledge necessary to exercise the art with advantage to mankind & reputation to themselves. Many have been & continue to be of opinion that observation or experience alone ought to be the basis of medical knowledge; the greater part however endeavour to derive advantages from various other sources that are usually comprehended under what is called the Theory of Medicine. Both opinions are attended with their advantages as well as disadvantages, and to whatever it may be owing, one point is at least certain, that the Art itself continues in a very imperfect state, and diversity ~~contrariety~~ of ~~of~~ sentiment frequently takes place on subjects where we would suppose it impossible for Men to differ. This has not only had a tendency to check y.

improvement of Medecine, but to lessen it in the estimation of some of the greatest & wisest Men, whose unfavourable opinion of it has in some countries at least ~~very much~~ greatly depressed the medical character.

As the knowledge of y. imperfections ~~will~~ may lead to the removal of them, we shall take notice of some, which have often been accused of laying the foundation for error. — Chemistry has been much employed to explain some of the Phenomena that take place in our System, and particularly to investigate the nature of the animal mixt. The constituent qualities however of this Mixt are still unknown to us. Animal blood has hitherto not been imitated by chemistry. It is not, ~~yet known~~ & perhaps never will, be known. Fermentation is peculiar to the vegetable & animal kingdoms, and it is this probably which gives a difference to the different animal substances. Fermentation however continues one of the mysteries of Nature; but untill it is understood the animal system must remain unknown. Secretion is another of the operations of Nature which eludes our researches. — Hence we may conclude with confidence that Theory, which is

built on Chemistry, to be imperfect. — Mathematics have also been employed to explain ye animal system; and tho the Mathematics afford as great certainty as human nature will allow, they are insufficient to answer our expectations. It has been often attempted to calculate the power & force of the heart; but as all writers ~~they all~~ differ in their calculations, we are only certain that the attempt has failed. The doctrine of derivation & revulsion continues as undetermined now as it was a century ago. Hence we conclude that Theory, which is built on Mathematics to be imperfect. — In Anatomy however our Science glories; but notwithstanding the accuracy of the anatomists, we are far short of perfection here. It explains sufficiently well the situation, structure & use of the parts; but their principles are little understood. In the organs of secretion for instance we perceive vessels which in appearance resemble many others in the body; we know too that they are destined for the secretion of a particular fluid; but we are not only entirely ignorant of the manner in which it is performed, but of its connection with the other functions of the body. In the organs of motion, Anatomy is equally defective; for tho we observe contractions to be performed, we are ignorant of the cause, because we

*If farther experiments should ~~confirm~~ establish this fact and confirm the opinion that the same will apply to all the muscular parts of the body, our present system of Physiology rests on a tottering foundation —

are unacquainted with the structure of the ultimate fibres; We see & are sensible of the alternate contractions & dilatations of the heart, but by what power is this accomplished — the heart of a frog will contract & dilate after it is cut out of the body & when no fluid enters the ventricle to excite its action. That much is yet unknown to us the following discovery is an instance. An indefatigable Anatomist in Germany publishes it as an indubitable fact that the heart receives no nerves, except those that are distributed to the blood vessels; but that the substance or muscular part of the heart is not furnished with any. Every thing indeed that relates to the nervous or animated system is involved in perfect obscurity. For tho we can trace the ~~orig~~ progress of a Nerve, we know but little of its state either at its origin or termination. We see the expansion of the optic Nerve, but why it should be disposed to see ~~or hear~~ in preference to the auditory Nerve is to us an impenetrable mystery. We are equally ignorant of the medium by which the impression is conveyed to the brain; for some contend it is a fluid; others call it Ether, others Electricity, and it is a moot point that they are all wrong. The difficulty is increased, by the con-

※ To render them as perfect as possible

nection which takes place between the different functions, and their mutual dependence on each other. The brain depends for its subsistence on the heart; the heart could not subsist without the brain. Digestion and Secretion depend not on the chemical, hydraulic or nervous system singly; but they all concur in performing these and every other function. And as we have found it impossible to investigate or explain them when taken singly, how much more difficult will the consideration & explanation of them be, when they are taken together. Hence it is evident that some thing else besides theory is requisite towards exercising this art beneficially — This is sought for in observation, History & the Analogy of diseases. To these it may however be objected that to make observations properly ~~it~~ is attended with the utmost difficulty & that there are few if any observations extant, that have been made with the necessary accuracy and attention. # We ought first to enquire into preceding circumstances, such as hereditary taints, remarkable accidents of life, manner & tenor of living; of previous condition of body & mind with the immediate

or exciting cause. We should in the next place ~~enquire~~ attend to all the present ~~circumstances~~; & ~~we must~~ moreover remark ye. extraneous circumstances; the state of the Atmosphere, regimen, motions of the body & mind, and particularly the event of the disease, and if it terminates in death examine ye appearances of the body. It is however but seldom that the Physician can make himself acquainted with all the particulars; ~~Patient~~ The Caprices of the Patients & Nurses, which frequently have great influence on the disorder, are commonly most industriously concealed. Our own Senses likewise occasionally impose on us, and it frequently happens that where two or more Physicians attend together, they differ in their judgment on the nature of the symptoms. They entertain different sentiments often even on ye frequency, hardness & softness, fullness or lowness of the Pulse. — Every difficulty, inaccuracy and mistake in Observation must enter into the History of the disease. These are much encreased when we consider the difficulty that attends the communication of Ideas. Many appearances that cannot be described; many apprehensions that cannot be defined. It is moreover liable to great fallacy from biass & prejudice. How often

do
the
a
fa
s
co
of
m
cu
Te
v
f
re
li
th
&
W
D
~~th~~
~~t~~
f

do we either from aversion or desire, Love & hatred, see things in a very different light from what they really are. A Person who favours a particular theory, turns & views facts in every direction untill he brings them to square with his theory. He sees every thing in false colours. Were ~~to~~ we to beleive all that has been said of Cures being performed by particular remedies, we must conclude ~~that~~ no disease ~~was~~ to be without its certain cure. Unfortunately however we too often find that remedies, tho highly extolled, are without any of the virtues ascribed to them. Medicine has also suffered from fraud & Imposture; a german Physician has recorded it as a fact that a Woman vomited up living Whelps; and it is within the memory of many that a Woman in England was said to have brought forth Rabbits and was even supported in her fraud & delivered of them by a man Midwife - These however are too gross & palpable to impose on rational persons. But Physicians have too often ~~indulged~~ ~~the~~ been guilty of publishing direct falsehoods to indulge the vanity of supporting or establishing a particular opinion. It has been confidently asserted that the cases published by the celebrated Dr Freind in his Emmenalogia were fabricated for the purpose

A more excusable, tho not less pernicious species of fraud is, when a Man in his Closet writes down observations which he imagines he noticed at ye bed side of the Patient, but is frequently guilty of the greatest errors & mistakes. Hence it happens that so few of the observations hitherto extant are attended wth much advantage. They are either too inaccurate; or the cure is said to have been performed by remedies which farther tryals have proved to be inadequate to the purpose. ~~Many~~ Questions too have been agitated for a century, in which both Parties have constantly appealed to experience as the test of truth, which either remains undecided, or proved both parties mistaken. Many of the points, which were agitated in Sir Robt. Talbots time, respecting the peruvian bark, are at this day undetermined. The british Physicians assert that Bark will cure mortifications; the french flatly deny it; and both are wrong. For tho it is an excellent remedy in some kinds of gangrene, it is far from being useful in others. The hemlock is esteemed an excellent remedy at Vienna in Scirrhus & Cancers, which is denyed by almost the rest of Europe. Cures are declared to be

made by particular remedies, and attested by witnesses of seemingly unexceptionable characters, that cannot however be imitated by others — James's Powder is an instance of this kind, besides many others which will be taken notice of on the proper occasions. From this statement then it is evident, that Medicine continues in a very imperfect state, and as it is a conjectural art it will always be extremely difficult to arrive at ~~certainty~~ that degree of certainty which is so very desireable in every profession, but more particularly in one where health & life are concerned. The first step towards amendment ~~improvement~~ is a consciousness of our imperfection; and therefore by knowing what has hitherto retarded the progress of Medicine, we may lay ye. foundation for its further improvement. This must undoubtedly be founded in experience & observations; but here we must be particularly careful to ~~&~~ select & trust those only that have been made with ~~made~~ accuracy & related with candour. For this purpose we must call reason to our aid, & hence we learn the absolute~~ly~~ necessity of studying ye. Theory of Medicine, which is nothing else than reasoning

on the various subjects that present themselves to our consideration. We are however to reason from facts & not to adapt the facts to our reasoning; for whenever this has been done in Medicine, it has uniformly led to error. To illustrate or confirm our principles we moreover collect Facts from natural history, chemical & mechanical Philosophy, from the Arts, and particularly from dissections of human & animal bodies in a sound & morbid state, ~~which~~ this leads to the knowledge of the proximate cause of diseases, which is certainly an object of the first importance; for it is now well known that the same proximate cause often produces different symptoms, and on ye contrary that the same symptoms may be owing to very different causes. No doubt can then be entertained but that Anatomy has led to many great discoveries in Medicine, of which Morgagni & many others ~~are~~ have furnished convincing proofs. As it may be useful in the acquisi~~ment~~tion of medical knowledge to prosecute the studies on some regular Plan, the following appears to me best calculated for the purpose; and tho it may not be in the power of every person to prosecute it in all its parts, I am persuaded that the nearer

Le ap
of m
the p
The s
Natu
Prof
stu
Lite
of a
the
wr
tra
Sto
som
an
con
h
g
us
f
is
c

he approaches to it, the greater will be his acquirements.. more will he be benefited.— It may be considered in two views — 1 — With respect to the preparation necessary to begin the Study — 2dly The study itself. Under the first head are required: 1st Natural qualifications or ~~a genius~~ Talents suited to the Profession: viz — good Sense, sound judgment and a studious disposition. 2dly The common foundations of Literature. It is scarcely possible to learn every thing of importance in this Science in any single one of the european languages. Many of our best ~~Writers~~ Authors wrote in latin; some of these have never yet been translated — e.g. — Lancisii. Torti, Werlhoff, Sauvages, Dehaen Stollius, some of the most esteemed works of Haller &c. many others; and those which have been translated are not always correct; this is evident from observing that some Authors have been translated by different persons, who have given different explanations of them. — The greek is useful, as many of the terms in Medicine are derived from that language. Of the modern Languages y. french is particularly desireable, and the italian & german contain many excellent treatises. Natural Philosophy as it treats of

Natural Philosophy, as it treats of & explains the theory of Vision & Sound, Pneumatichs, hydrostaticks and various other Phenomena which are indispensible to our wellbeing, is a very useful & indeed necessary ~~study~~ science to ye ~~Phy~~ medical student. — Anatomy as it teaches us the structure, conformation & situation of the different parts of the human frame, which is the subject of the Physicians care & attention, is very properly considered as a most essential branch of the Science of Medicine. Physiology wh. teaches the functions of the different organs & parts & how they are performed in a healthy state of the body, is very intimately connected with Anatomy & is indispensibly necessary to be understood, for how are we to restore health & vigour to a diseased part, if we are not perfectly well acquainted with its ordinary & proper functions. But the practice of Physick consists in an accurate knowledge of the diseases incident to the human frame, and of the remedies with which health is to be restored. The former comprehends the diagnosis morborum; the latter the Materia Medica. And as many of our most efficacious remedies are furnished by the mineral kingdom, and almost all require some preparation before they are administred to the Patient, ~~Chemistry is~~ some knowledge of Chemistry is undoubtedly useful to the practitioner of Physick. At the same

To obtain a degree in this University it is necessary that ~~the~~ a Gentleman should attend at least one course of Lectures of the different Professors; he may then offer himself as a Candidate either for a Bachelor's or Doctor's degree in Medicine; the examinations for both are the same; there is no difference but that of publishing & defending a Thesis, which entitles the Candidate to the degree of Doctor in Medicine. It is the determination of the Faculty to ~~render~~ make a bachelor's degree ~~as respectable~~, ~~and to be~~ the criterion of Merit, and as respectable as any degree whatever.—

time however it is but justice to observe that it is less essential to the Physician than the other parts now pointed out to you as properly constituting a medical education. In fine I would recommend the study of Chemistry as necessary to understand the pharmaceutical treatment of medicinal substances & to guard ~~you~~ against making injudicious compositions; but by no means to ~~neglect~~ engross so much time as to neglect much more important studies. — In conformity to this Plan the medical Professorships in this University have been instituted. Chemistry & Materia Medica are very properly combined as being intimately connected with each other & by which the Student is very much benefited. — For those Gentlemen whose convenience will not allow them to devote more than one Season to attend Lectures, may with industry & application attend Lectures on all the different branches of Medicine, which would be next to impossible, if the Professorships had been multiplied; and those again who can attend two or more seasons will not only find their expences lessened; but what is of much more consequence, a shorter space of time employed in attaining their object. — #

Before I conclude it may not be amiss to explain in a few words ~~that~~ what is proposed to be taught here. — A course of Lectures on the Theory & Practice of Physick comprehends Physiology, Pathology with the history & cure of diseases — Physiology which teaches the functions of the different organs & parts in a healthy state of the body, is, as was before observed, so intimately connected w.t Anatomy, that they cannot well be separated, at lea it is very difficult to acquire any perfect idea of the subject but when combined with anatomical demonstration. So far however as it may lead to a more perfect knowledge of a disease, nothing shall be omitted that can be of any usefulness. With respect to Pathology it appears undoubtedly more rational to point out how the functions are injured by disease when we treat of the method to restore them to a healthy & sound state, than to separate the two considerations. I shall therefore when treating of any particular disease deliver the Pathology of it, that is in what manner the functions are impeded so as to produce disease. With the history of each disease the occasional, predisposing & proximate causes will be pointed out, the various Symptoms that occur be ~~pointed out~~ accounted for; from these a prognosis be formed, and from the indications of cure the most approved method of relieving the disease be delivered. The diseases incident to children & the female sex will be particularly treated of ~~at~~ and conclude the course. It would be improper for me to enter into any detail on the advantages to be derived from such a course of Lectures; but it may not be improper to assure you that my best endeavours shall be exerted to render it useful &, ~~instructing~~ interesting.—

ratif
ct lin
bject
l fo
f of a
)
tedly
d by
to a
idera
di
aner
With
xi
hat
and
of
to
t
to
from
to
to

From the first dawn of Medicine to the present time, the difficulty which attends the study of ~~Medicine~~ Physick has been acknowledged by the most eminent Professors of the Art. Ars longa, vita brevis is the introduction to the aphorisms of Hippocrates, the truth of which has been confirmed by succeeding ages. The difficulty however is certainly much lessened, if a proper plan is pursued to obtain our object. ~~The~~ To distinguish ~~a~~ the diseases with accuracy, to investigate their causes ~~with~~ as far as it is practicable, and thence to determine on the most rational method of removing the cause, or when this cannot be accomplished, to obviate its effects, are certainly the important points on which the success of our

practice must depend. The great advantage therefore to be derived from ~~from~~ ~~of~~ attending medical Lectures is, that ye experience of former times is methodically arranged, & faithfully detailed; Errors & even doubts exposed, & as far as the experience of an ~~[illegible]~~ individual can have ye effect ~~hav~~ ~~extend~~, to ~~confirm & improve~~ judicious & candid observations confirmed & improved. Hence the study of Medicine is greatly facilitated by an attendance on medical Lectures; these will lay ye foundation, on which you by industry & application to raise a superstructure equally profitable & honourable, to become respectable in the sphere of Life in which you are placed by Providence, & to support a character with dignity yo

ag

A

co

fo

c

c

V

a

you must arrive at eminence in your profession; unwearied application & indefatigable industry will infallibly conduct you to that point. The only rule for your conduct as men & as Physicians is comprized in these few words: Do unto others as you would wish them to do unto you. In these every duty is comprehended, and by attending to them, a consciousness of the rectitude of your intentions will shield & defend you against the untoward accidents & occurrences of Life —

I should neither do justice to you or to my feelings, were I to pass unnoticed the regular and assiduous

ttention with which you have honoured
these Lectures, and of which I shall always
retain a pleasing recollection — and tho
the greater part of you will in a short
time be removed to a distance from
me, I beg you to be assured that I
shall ever feel myself interested in
your prosperity, and be at all times
ready to render you every friendly
office in my power.— With ye warmest
& sincerest wishes for your welfare and
happiness I now take my leave of you:
May you discharge the important duties of
your profession with honour, & may ye practice
of Physick be attended with emolument
to yourselves & advantage to your
fellow creatures—

his is the foundation of Clinical Lectures, where every thing certain ought to be de-
livered & nothing hypothetical; & where every Theory is brought to ye touchstone
f Experience. # I shall now make some reflections on ye Nature & Cure of
iseases in general. Every Animal hath a certain external & internal Struc-
ture of parts, & certain functions allotted to them: when an Animal hath
he parts natural & in common to its Species, & performs the functions
properly, it is called a natural or sound state; but ~~when we~~ a Disease is
hat state of the body, where the functions necessary to health, are either unduly
performed or not performed at all. This State arises either (1) from something
in ye habit which impedes the functions or (2) from something wanting
hat is requisite for their performance. thus ye Vomiting and other Symptoms wh.
nsue after swallowing too large a quantity of corrosive sublimate, & in the
aundice the obstruction of ye bile from stones in ye biliary ducts, are examples
f ye first mentioned cause; whilst the Indigestion & other Symptoms from defect
f bile in the Intestines, is an illustration of the other. Hence ye general Indications
f cure are to remove what is hurtful, & to supply what is defective. In ye case
f Sublimate being swallowed, we remove what is hurtful by dilution & exciting Vo-
miting, in ye Jaundice we remove what is hurtful by Medicines to dissolve ye
Stones, we restore what is wanting by Bitters & Saponaceous medicines. Sydenham
hath defined Disease to be an effort of Nature, to throw off ye offending cause. But
his definition is not a true one, it applies only to ye Symptoms of ye Disease,
r unusual morbid motions, excited by ye power of feeling in animal fibres; for
were our Machine merely mechanical, obstruction would produce no violent
Symptoms, but it would become unfit for performing ye functions, wtout the
xertion of any effort. To render this more clear viz. that ye Symptoms can only
properly be called an effort of Nature ~~to throw off ye offending cause~~ I shall give
an example. When there is an indolent tumor of ye Neck, we must allow a disease.
but then no effort is exerted; & that only is ye case when ye tumor becomes painfull
& ye Vessels are thrown into motions which ~~th~~ tend to remove the disease

Stone in ye Kidneys is a disease, but no effort is exerted till pain is produced, which affects the Heart & Arteries & encreases ye circulation; by sympathy ye Stomach i affected & thrown into convulsive motions, by which a Vomiting is produced consequently the squeezing of ye Kidneys, &c by this an effort is made to throw off ye offending Cause. In general however we may speak of a disease as an effort to restore health & hence see ye truth of what Hippocrates said, ye Nature was ye curer of diseases. It must be confeſsed however that tho this be true, that Nature often stands in need of aſsistance & that ye motions excited are sometimes so violent as to endanger life, and sometimes too slow to preserve it, so that ye Indications come to moderate or to encrease the motions excited, & to dilute so as to expel the offending cause. Instances of this we have in the Nephritis, Swelling of ye Parotides & ye Smallpox. The Cholera Morbus is also another example. Nature endeavours to cure this disease by expulsion, & we are to aſsist her by dilution; but if the Vomiting & purging too violent, we must stop them by Opiates & afterwards carry off ye acrid matter by purgatives. But ye Physician must not only aſsist Nature, he must also direct her: her efforts being sometimes vain & sometimes misplaced. Thus when ye Gout goes to ye head or Lungs, we must not aſsist her, but endeavour to bring ye disease to ye extremities. The powers of Nature are very different. In acute diseases she is the chief Physician & what Medicines are given, are given as she directs. In chronic complaints ye case, is very different — On what does this difference depend? In acute diseases there is something to encrease the motion of ye blood, & ye disease is of itself leſs permanent; in the chronic there is nothing to rouse Nature: the circulation is little changed, ye disease is more fixed & worse to conquer & if efforts are exerted, they often tend to encrease ye disease, as e.g. in ye Stone in ye bladder. Hence the Physician hath most to do in chronic cases. In acute diseases ye constitution & strength ~~are~~ make ye chief difference & when no particular part is inflamed there often needs no farther aſsistance than lying in bed & diluting drinks; but when there is particular inflammation or danger of ye putrefaction and Gangrene

then Nature is not the Cure, but the Physician. It must nevertheless also be allowed that in many acute diseases, a prudent Physician sees occasion to look on for many days & here we may say w. Cicero: Naturam optimum ducem tanquam Deum sequimur. The general Rules for the treatment of acute distempers are (1) accurately to observe how they naturally proceed & what Nature seems to point at (2) not to force a crisis (3) never to give Stimulants, when the Motions are too much encreased, nor Anodynes when they are too weak. — A Physician should learn to use few Medicines, & not to change them too often, as time is often necessary for the operation. — In chronic cases Boerhave always directed his prescriptions to be used 2 or 3 Months. —

Before we enter on the immediate consideration of our Subject it will be proper to premise something on the plan of these Lectures & what is proposed to be taught on them. A course of Lectures on the Theory & Practice of Physick comprehends Physiology, Pathology with the History & cure of diseases. In the medical Schools of Europe the two former are often delivered seperately & constitute a course independent of ye Lectures on the Practice, this may no doubt answer extremely well in those Institutions there it is not uncommon for Students to continue for three more years, which ~~affords~~ allows them sufficient time to study Medicine on a much more diffused & enlarged plan then is suited to the circumstances & situation of this country. But even then great part of the time is employed in establishing & refuting particular opinions which is perhaps not always to much purpose. —

siology which teaches the functions of y. different organs & parts
a healthy state of the body is so immediately connected
h Anatomy that they cannot be well separated, at least it
very difficult to acquire any perfect Idea of the subject but
n combined with anatomical demonstration — So far however
it may lead to a more perfect knowledge of a disease, nothing
ll be omitted that can be of any usefulness. With respect to
thology it appears certainly more rational to point out how
e functions are injured by disease when we treat of the method
restore them to a healthy & sound state, than to separate the
o considerations. — I shall therefore ~~under~~ when treating of any
rticular disease deliver the pathology of it, that is in
hat manner the functions are impeded ~~& the~~ so as to produce disease ~~produced~~.
Various Plans & Systems have been proposed & published on the best
method of delivering the Practice of Physick; all of them are attended
ith their imperfections as well as perfections. — I propose to
llow the order laid down by Dr Cullen in his Synopsis & Practice
f Physick, allowing myself however the liberty to deviate from
im where my Sentiments do not coincide with his. As
to many of you the idea of a Nosologia methodica may not
be very familiar, it will not be amiss to explain what is
meant by a Nosologia methodica. —

I has been & is the opinion of some Men of distinguished eminence
t ~~&~~ every disease was distinguished by pathognomic or peculiar
mptoms which were characteristic of it & would serve to discrimin-
te it from every other; in the same manner as the various
ductions of Nature, particularly in ye. vegetable & animal
gdom are by peculiar marks distinguished from all others;
consequence of which they are reduced under their respective
sses, orders & genera. It was thought that diseases might be
ranged in the same manner, & that those which agreed in
ir nature & treatment would of course be classed or associated
gether, & thus greatly facilitate the study & knowledge of diseases.
Sauvages of Montpellier & ye. celebrated Linnaeus were among the first who
rosecuted this idea to any extent; Sauvages & Linnaeus were
t only cotemporaries but on terms of the most intimate
riendship, & I was taught to believe that ye. idea of a Nosologia
ethodica was first suggested by Linnaeus to Sauvages who urged
him in the strongest manner to make & prosecute the attempt.
Sauvages accordingly published a small volume on the subject, &
Linnaeus some years after his genera morborum which served
him as a Text for his Lectures on the Diagnosis morborum. In
my attendance on those Lectures, ~~Linnaeus~~ I had an opportunity
of hearing the System explained & ye. advantages of it pointed out

me years after Vogel & Sagar published their Systems & Dr. Cullen —
since favoured us with his. It would answer no purpose to
ke any remarks on Systems which are known only by name
mong us; but it will not be improper to offer some considera-
s on Dr. Cullens.— The principal object as I before observed is
arrange diseases of a similar nature together & to distinguish them
invariable & fixed Symptoms. Unless this is accomplished one prin-
pal design of a nosologia methodica is lost. And tho the classes
ders of diseases, in the same manner as in subjects of natural
tory, may be artificial, it is absolutely necessary that the different
nera should be natural, & that every species should posess the
racteristic or pathognomic symptoms of its genus. But if we
dge of Dr. Cullen's System by this standard it will be found
fective.— One or two instances will at present be sufficient, reserving
he remarks on others when we treat of the particular diseases—
nder the genus Cynanche he comprises the inflammatory & the
utrid sore throat as Species; tho in their nature, cause & cure
~~dis~~ two diseases can be more distinct; with equal propriety
ight he have placed the inflamatory & putrid fever under the
ame genus, for they differ no more than ẏ. putrid & inflamatory
re throat from each other. They have nothing in common but
heir being seated in the same parts; & so is a Peripneumony &
onsumption, which however he considers as different genera

tho much r. analogous than y. putrid & inflamatory sore t
Under the genus Apoplexy he places the Hydrocephalus, & y. e
fects of poysons & cold as Species, tho totally different in th
Symptoms & cure. But notwithstanding these defects, whi
are indeed great & striking & may be urged as powerful o
jections against any nosologia methodica, his first Lines of
the Practice of Physick, which I trust you are generally f
nished with, is a performance of superior value & merit on accou
of the History of diseases which he has there delivered. In th
in my opinion, consists its great excellence & it stands altog
ther unrivalled for the conciseness, perspicuity, judgmen
& accuracy which he has shewn in this most essential
part of every Treatise on the practice of Physick. His h
story of many diseases is indeed so perfect & compleat that
a Commentator must often be at a loss to ~~add~~ make any ob
servations or remarks worthy of attention on them. It is t
excellence however which recommends it particularly to the
constant attention of the Student of Medicine, for nothing c
be of greater importance to him than a perfect & intimate
knowledge of diseases; and tho the arrangement may, in m
opinion at least, be in some instances faulty, & his theories
not always consistent ~~wi~~ my sentiments ~~of~~ on particular

fects, I still have ye highest pleasure in doing justice to the
its of this book, which I am persuaded will maintain a
minence ~~which~~ as long as medicine shall be cultivated as a Science.

The question has lately been a good deal agitated among
whether there is any advantage to be derived from ye Study
Latin, & whether it is in any degree necessary to a medica
education. Dr Williamson in a letter to Dr Johnston of New
has endeavoured to explode ye idea that Latin is necessary,
of all ye publications that I have read on the subject appears
me to have advanced the most powerful reasons & argument
against it.—To me however they are not conclusive, & I am
entirely of the opinion that in the present state of medical
Science it is of considerable use to have a knowledge of the L
Tongue. It appears absolutely necessary that the Literati in
different countries of Europe should have a common language in w a
convey their sentiments.—From a variety of circumstances, a
present not to be enquired into, the latin is the language u
in that intention, & hence a variety of books have been &
continue to be published on the Continent of Europe in lat
that are not translated into english.—The works of Hoffm
of De Haehn, many of the most esteemed works of Haller, co
Cullens Synopsis with a number of other very capital book
are in latin & will probably never ~~be~~ make their appearan
in an english dress.—And tho there is no doubt but what a
Person may practice Medicine with success who has never read
those performances, yet it is equally true that he would practice
medicine with more advantage if he had read them.—